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CENTRAL METEOROLOGICAL OBSERVATORY

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PART II.

F. MAGNETIC OBSERVATIONS.

G. OBSERVATIONS ON ATMOSPHERIC ELECTRICITY.

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The magnetometer case is set upon the stage and can be levelled by four screws at the upper surface of the stage and centered by other four screws at its vertical sides. The magnet is a small hollow cylinder piercing a mirror centrally perpendicular to its plane. Mirror and magnet are fastened to an aluminium stem, whose lower end is broadened, so that it may, when necessary be securely gripped by means of a vice fitted to the lower part of the case. The suspension is made by means of a spider line.

The peculiar feature of the declinometer is a coil of wire, wound on a flat ractangular frame of brass in two separate parts, a certain portion in the middle being left vacant. Two pivots project from the middle of the sides in a directionp erpendicular to the axis of the coil. These pivots are hollow, and are made of the same external diameter as those of the telescope belonging to the theodolite. The upper and lower surfaces are pierced so as to allow the magnetometer to project above the coil.

To bring the coil into adjustment, it is necessary to operate as follows. Place the stage and magnetometer on the theodolite, and mount the coil with its pivots resting on the Y's. Adjust the Y's into an approximate east and west direction by sighting the freely hanging mirror edge-on through the pivot cores. Lay the coil horizontal, so that the ends of the coil now face north and south. Adjust the centering of the magnetometer and place the small telescope with attached scale and lamp-counterpoise in due position. Clamp the stage and all its bearings to the base of theodolite, thus rendering them quite free of the Y's and consequently the coil being able to be turned round independent of every thing else. The magnetometer stage is adjusted until some convenient division on the scale, as reflected from the magnet mirror, is brought to coincidence with the cross-wire of the observing telescope. Thus all things are prepared.

The coil is now in circuit with a small dry battery. This is done by communicating it with the resistance box, whose terminals are joined to the poles of the battery and which enables to change the direction of the current. At the first trial the direction of the current should be such as to make the magnetic field due to the current in the coil have the same (general) direction as that of the earth. This is readily judged of by the quickened movement of the magnet. The reflected image of the scale will in general be seen to move. With the current always on, let the azimuth of the coil be shifted until the originally observed reading of the scale is brought back again to the cross wires. Since the magnetometer and telescope have been absolutely fixed in position during the whole operation, this gives to the first approximation the direction of the declination. The current is now reversed. In general, the result of this will be that the image of the zero scale reading will slowly move to one or other side of the cross wire. The resistance is then adjusted until the current is such as to cause the time of oscillation of the magnet to be some three or four times as long as that under the earth's force alone. The original division of the scale is again brought back to the cross wire by carefully adjusting the azimuth of the coil. If the current is now broken and the scale image does not shift, it is certain that the magnetic axis of the coil in the magnetic meridian. The reading on the theodolite gives it azimuth. An exactly similar observation is made with the coil reversed as regards east and west. Next, two such observations must be made in overturning the coil up and down. The mean of the four readings gives the declination at that instant corresponding to the mean of the two instances of the first and the last adjustments, quite independent of any errors resulting from

any (slight) deviation from perpendicurality between the axis of the pivots and the line of magnetic force at the centre of the coil due to the current in it and from any deviation of the centre of the coil from that of the magnet. A complete observation usually takes four or five minutes.

Horizontal Intensity.—For the determination of the horizontal Intensity, the declinometer must be removed and in its place a deflection bar substituted. The bar is made of brass and has a V-groove on its upper surface—or rather two V-grooves extending the one to the east and the other to the west, when the instrument is mounted ready for use. Where the bar rests on the Y's, it is made in the form of the semi-cylinder—the upper surface being flat, the lower having the same curvature as the pivots of the theodolite telescope and the declinometer coil. Between the Y's, the bar swells out into an oblate ring, through which the magnetometer projects. A semi-circular groove is cut in front of the ring, so that the magnet mirror can be sighted by the small telescope. On the V-groove of the bar there are four stops two on each side of the centre. The deflection magnet rests in the groove, and the stops are so placed that the two distances of the magnet from the centre are obtained simply by slipping the magnet along the groove from one stop to the other, without having to lift it out. The stops are placed so as to make the ratio of the two distances the best possible, according to the usual rule.

The instrument is obviously available for use either according to the method of sines or the method of tangents. The former method is the preferable one; and, in using it, it is necessary to clamp the stage to the Y's, and free it from the base of the theodolite. The operations are then conducted exactly as with the Kew instrument. The temperature of the bar is measured by means of two thermometers placed in its opposite sides beyond the further stops. It is advisable to dust with a small brush the surfaces of the magnet and stop just before they are brought together. The chronometer time is taken as the final deflection is adjusted. The beginning of the experiment is given by the first time record in the vibration experiment, which it was found most convenient to make first. The mean of these times is taken as the time corresponding to the value of the horizontal force as finally deduced.

The vibration experiment is made in a vibration box somewhat similar in construction to the one used in the Kew instrument. It is mounted on a second tripod, so that the magnetometer stage need never be removed until the theodolite has to be used for the astronomical observations. The magnet is suspended by two loops of silk from the end of a silk fibre freed from twist in the usual way and its horizontality is well adjusted. A horizontal vibration of about half a degree is given to the magnet, and it is observed by means of a telescope. The observer signals the instant of transit of the middle point of the swing, and these are noted down by recorder at some distance. The temperature is observed at the beginning and the end of the experiment with a thermometer attached to the inside of the glass window of the box, the mean of two readings being taken as the temperature in the vibration experiment.

For determining the horizontal intensity all the necessary corrections are applied. The torsion and arc correction are applied in the usual way; the time correction is applied so as to reduce the time-unit at once to the mean solar second; besides these we may mention the corrections for induction, expansion of steel magnet and of the brass, which constitutes V-groove on which the magnet is to be placed in the deflection experiment, and the correction for the temperature difference in the vibration and the deflection experiments.

The vibration experiment is usually taken before the deflection experiment. From the first recorded swing to the last deflection adjustment the whole experiment generally takes about 20 minutes.

Dip.—The observations of dip are made by means of a dip circle Cassela 17. The magnetization of the needle is reversed by means of an electro-magnetic coil. A complete observation usually takes 20 minutes.

The astronomical meridian is sometimes determined by obeservations of circumpolar stars or of the sun. Thus, the azimuth of the top of a tower of a Cathedral Nicoli at a distance of about 1.5 km. is often tested. The reading of the meridian is usually reduced from that of the object.

PHOTOGRAPHIC RECORDS OF MAGNETIC ELEMENTS.

Photographic records of magnetic elements are made by means of a Mascart's magnetograph. Let us shortly describe the arrangement of the instrument and the method of reduction.

THE ARRANGEMENT OF THE APPARATUS.

Declinometer.—It is contained in a metal case with a tube on its cover. From the upper end of the tube, a magnet with a mirror perpendicular to its direction is freely suspended by means of a fine silk thread. There is a second mirror fixed to the base of the case. Thus, the rays of light falling upon the two mirrors reflect on a photographic paper moving by a clock-work, one tracing the curve of variation of the magnetic needle and other the fixed line.

Bifilar.—Its construction is similar to that of declinometer. But, in this case, the magnet with a mirror parallel to its direction is suspended by means of two fine silk threads and put in equilibrium in the direction perpendicular to the magnetic meridian in virtue of the couples due to the horizontal intensity and the torsion. Its sensibility can be adjusted by regulating the distance between the two points of suspension. The light reflected from the mirror traces the variation of the horizontal intensity.

Balance.—It is a magnetic balance with a hole in its central portion. There is, in the hole, a knife-edge, by means of which the magnet rests on an agate plane, and the magnet is placed horizontally by adjusting the position of its centre of gravity by means of a small index attached to it, the couple due to the vertical intensity equilibrating with that due to gravity. The sensibility can be adjusted by means of two weights movable in the horizontal and vertical ones attached to the magnet. The whole is contained in a metal case. There are two horizontal mirrors, one fixed to the case, and the other to the magnet. At the central portion of the cover of the case, there is a hole on which an isosceles rectangular prism is placed, the two faces being, put horizontally and vertically. Thus, the light falling upon the vertical face of the prism is refracted towards the mirrors and again reflected and traces the variation of the vertical intensity and the zero line.

METHOD OF REDUCTION.

The hourly ordinates of the three magnetic curves are at first measured in milimetres and the tenths.

For declination, the ordinate values are then reduced into minutes by multiplication of the factor 1'.47 which is the angular value for 1 mm. of the paper. The ordinates measured for the times of the absolute measurements combined with the absolue values of declination, give the values of the base line, from which hourly values of declination are all reduced.

For the horizontal and vertical intensities, the ordinates of the curves are multiplied respectively by the factors $\triangle H$ and $\triangle Z$, which are the variations of the horizontal intensity (H) and the vertical intensity (Z) corresponding to 1 mm. of the paper. The mean values of $\triangle H$ and $\triangle Z$ for each month were as follows:—

	$\triangle H$ (in C.G.S. units)	$\triangle Z$ (in C.G.S. units)		$\triangle H$ (in C.G.S. units)	$\triangle Z$ (in C.G.S. units)
January	5.95×10^{-5}	11.18×10^{-5}	July	4.59×10^{-5}	8.37×10^{-5}
February	5.91	10.26	August	4.47	7.58
March	6.20	8.96	September	4.50	8.05
April	6.17	8.68	October	4.29	9.49
May	5.10	6.95	November	4.17	8.14
June	4.08	7.36	December	4.14	8.69

TEMPERATURE COEFFICIENTS OF BIFILAR AND BALANCE.

The temperature of the room where the photographic record is always made can not be constant, the range in a day sometimes amounting to nearly 1°.5 C. Thus, the temperature coefficients of the bifilar and the balance were determined on June, 1898. The result was as follows:—

	Temperature Coefficient for 1 °C.
Bifilar	20.73×10^{-5} (C.G.S. units)
Balance	30.45×10^{-5} („)

DIRECT READING SYSTEM.

The system is essentially the same as the self-recording magnetograph. By means of this system, the variations obtained by photographic records are often tested.

HARMONIC ANALYSIS OF DIURNAL VARIATION OF MAGNETIC ELEMENTS.

Expressing the mean of hourly values of magnetic elements for every month and the year by the formula

$$f(t) = p_0 + p_1 \cos t + q_1 \sin t + p_2 \cos 2t + q_2 \sin 2t + p_3 \cos 3t + q_3 \sin 3t + p_4 \cos 4t + q_4 \sin 4t,$$

where t is the Central Standard Mean Time (mean time of the meridian 135° E) coverted into arc; and $f(t)$ the mean value of the magnetic element at the time t, the coefficients p_0, p_1, q_1, p_2, q_2, p_3, q_3, p_4 and q_4 were calculated.

Comparing the calculated and the observed values for the year, the following results were obtained:

	Sum of squares of residuals
Declination	0.0227
Horizontal Intensity	1.62
Vertical Intensity	2.15

the unit being minute for declination and 10^{-5} C. G. S. unit for horizontal and vertical intensities.

HOURLY VALUES

OF

MAGNETIC ELEMENTS

observed at the Central Meteorological Observatory, Tokio,

1898.

Time is given in the Central Standard Time (the mean time of the meridian 135° E).

The declination is measured in degrees and minutes, the horizontal and vertical intensities in C. G. S. units. For the hourly values, the declination is given to 0.1 minute of arc; the intensities to the fifth decimal of the C. G. S. unit. For the mean values, one more figure is added, i.e. the declination is given to $0'.01$ and the intensities to 10^{-6} C. G. S. unit.

The mean values are the means of 24 hourly ordinates from the photographic register, using all days of complete record. The values for intensities are all corrected for temperature.

The characters of the diurnal variation of the magnetic elements are divided into 5 classes:

Calm (C), Agitated (A), Light Storm (S°), Storm (S), and Severe Storm (S^{2}).

DECLINATION: 4°+ . . .′ . W

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
1	31.6	33.1	33.5	33.7	32.8	33.1	32.5	31.6	31.5	31.6	33.1	34.0	33.8	33.1	31.6	32.1
2	32.2	32.2	32.5	32.4	32.7	32.7	31.8	30.6	30.4	31.9	33.7	35.4	35.9	34.6	33.2	32.8
3	32.4	32.2	32.4	32.4	32.1	32.1	32.1	30.7	30.9	32.4	33.8	33.8	33.7	32.4	32.1	31.6
4	32.2	31.9	32.2	31.9	32.1	32.2	32.1	30.7	30.3	30.3	32.1	33.4	33.7	33.1	32.2	31.8
5	32.1	31.8	31.8	32.1	32.2	32.1	31.5	30.4	30.3	30.7	31.8	32.5	33.2	33.1	32.4	31.8
6	32.1	31.8	32.1	32.2	32.5	32.2	32.2	30.6	29.9	30.9	30.9	33.1	32.9	32.4	31.6	31.6
7	31.8	31.8	32.2	31.6	31.6	31.8	32.4	31.5	30.7	30.7	3 .2	33.5	34.3	33.1	32.7	32.2
8	31.7	31.7	31.7	31.7	31.8	31.8	31.7	30.1	29.3	29.6	30.6	32.3	32.7	31.7	30.6	31.2
9	31.7	31.7	31.5	31.7	31.8	32.1	31.7	30.6	30.1	29.9	30.9	32.3	32.2	32.1	31.5	31.7
10	32.0	31.7	31.7	31.7	31.7	31.7	31.7	30.2	30.2	30.8	32.3	32.8	32.7	31.5	30.3	30.6
11	31.7	31.5	31.4	31.5	32.1	32.1	33.0	32.0	31.4	32.1	32.8	33.0	33.3	33.1	32.0	32.0
12	31.6	31.6	31.6	31.7	32.0	32.3	32.6	31.4	31.6	31.4	32.0	34.1	33.3	32.0	30.7	30.8
13	31.6	31.6	31.6	31.6	32.2	32.9	32.2	31.4	31.6	31.6	32.0	32.9	33.3	33.0	33.2	31.3
14	32.0	31.4	31.6	31.6	31.6	31.7	31.9	31.0	30.7	30.7	31.4	32.5	32.3	32.2	31.0	30.7
15	31.6	31.4	31.4	31.3	31.4	31.6	31.4	31.6	30.5	31.7	33.5	33.9	34.5	33.5	32.5	31.7
16	31.0	30.6	30.6	30.6	33.2	31.8	31.3	31.3	31.3	31.9	33.8	35.0	34.3	32.5	31.0	31.3
17	30.3	31.8	30.0	31.9	30.9	31.8	32.3	35.0	31.3	31.9	33.1	34.6	35.3	33.5	33.1	32.1
18	32.6	31.5	32.3	31.3	31.3	34.9	31.0	30.9	30.4	30.9	32.6	34.4	34.7	33.2	31.9	30.7
19	32.2	31.6	32.2	34.0	31.6	34.1	32.9	31.0	30.9	31.6	32.3	34.7	34.3	34.3	32.5	31.8
20	32.4	31.2	32.0	32.4	31.4	32.2	31.8	30.5	29.8	30.6	31.1	32.5	32.7	32.0	31.7	31.7
21	31.8	31.8	31.8	31.4	33.1	31.7	32.1	31.2	31.1	33.4	34.3	34.6	34.8	33.7	32.8	32.2
22	31.7	31.8	31.8	31.5	31.2	32.1	33.4	31.7	30.2	29.9	30.2	30.8	30.9	31.1	31.8	32.0
23	31.2	31.2	31.4	31.5	31.7	32.0	32.1	30.5	29.3	29.8	30.5	31.4	32.0	32.0	31.5	32.0
24	31.1	31.1	31.3	31.3	31.3	31.1	31.1	30.4	29.7	29.7	31.0	31.9	31.9	32.0	31.4	31.4
25	31.6	30.7	31.1	31.6	31.3	31.4	31.3	31.1	30.5	30.5	31.9	31.9	31.9	31.6	30.8	30.5
26	31.3	31.1	31.6	31.6	31.6	31.4	31.3	30.7	30.8	31.1	31.9	32.6	32.6	32.6	31.9	31.6
27	31.3	30.4	30.7	31.0	31.1	31.7	31.9	30.7	31.0	31.1	31.9	33.3	33.1	32.1	31.1	30.5
28	31.0	30.6	31.2	31.5	31.9	31.0	30.9	30.3	30.3	31.2	32.1	33.0	32.6	32.6	32.3	31.2
29	31.5	31.5	31.0	31.2	31.2	31.3	31.8	31.2	30.9	32.0	32.8	34.0	34.1	33.2	32.0	31.0
30	31.3	31.8	31.3	31.5	31.5	31.8	80.3	29.6	29.7	30.3	31.8	32.9	32.8	32.6	32.0	31.0
31	31.8	31.5	31.2	31.5	31.8	31.9	31.2	29.8	29.8	31.8	32.8	33.0	32.9	32.9	31.8	30.9
Mean	31.69	31.54	31.64	31.74	31.83	32.08	31.85	30.98	30.53	31.10	32.17	33.23	33.31	32.67	31.84	31.48

DECLINATION: 4°+ . . .′ . W

1	30.5	31.1	30.4	31.3	31.2	31.2	31.1	30.4	30.3	30.6	30.3	32.1	33.2	32.1	30.3	30.6
2	31.5	31.2	31.3	31.5	31.5	31.3	31.5	30.2	28.0	29.5	30.6	31.6	32.1	32.9	31.3	30.7
3	30.2	30.6	30.9	30.4	30.8	30.1	31.2	30.9	30.4	30.2	31.3	32.9	32.9	32.6	31.9	31.5
4	30.4	30.4	30.9	30.9	30.4	31.2	31.7	30.4	29.8	28.7	29.7	30.9	31.5	31.9	31.7	30.7
5	30.3	30.6	30.4	30.4	30.4	30.2	31.4	31.4	31.5	30.7	30.4	31.4	31.8	31.5	30.6	30.3
6	30.4	31.8	29.8	30.5	31.4	31.5	31.4	30.7	30.7	30.1	31.4	32.4	32.6	32.4	31.9	31.4
7	31.5	31.1	31.4	30.7	31.6	31.1	31.4	31.1	31.1	31.8	32.2	32.4	31.8	31.8	31.4	31.4
8	31.4	31.6	31.6	31.3	31.3	31.1	31.3	30.5	30.7	31.8	32.2	32.4	32.0	31.4	31.0	30.5
9	30.7	31.0	31.6	31.6	31.3	31.6	30.7	30.4	30.1	30.4	32.2	33.0	32.2	31.4	31.6	31.1
10	31.4	31.4	31.1	31.2	31.1	30.8	30.1	30.3	30.8	31.7	31.8	32.7	32.3	31.9	31.7	30.6
11	31.7	31.5	31.1	30.5	30.7	30.5	30.4	30.1	30.3	31.5	32.3	33.5	34.7	34.2	34.6	32.8
12	33.5	32.0	32.3	32.0	33.0	32.3	30.4	34.8	32.0	32.5	34.7	35.0	32.7	34.3	33.1	32.1
13	31.8	31.7	33.1	33.1	32.0	32.0	32.2	32.6	33.0	33.1	32.8	33.3	33.1	32.7	31.9	31.7
14	31.8	31.6	31.8	31.6	30.5	30.9	30.5	30.5	30.6	34.1	36.0	36.0	34.7	34.1	33.2	33.3
15	30.6	32.0	32.0	32.0	31.8	31.0	31.8	32.4	31.8	32.1	33.2	34.6	33.9	32.1	31.8	31.8
16	31.8	30.9	32.0	31.0	31.8	32.0	32.0	31.8	31.3	32.0	32.3	34.4	33.2	32.2	31.8	31.0
17	32.0	31.2	31.3	31.2	31.2	31.3	31.0	30.5	30.6	30.9	32.3	34.6	34.9	31.4	31.9	31.5
18	31.8	30.9	31.8	31.4	30.7	31.0	30.6	30.7	31.6	31.9	33.2	31.5	31.5	32.2	31.8	31.8
19	31.8	31.9	31.9	31.9	31.8	32.3	30.9	29.4	30.5	30.4	32.2	35.0	35.4	35.0	33.9	33.3
20	31.8	31.8	31.3	30.9	30.6	30.7	30.4	30.4	30.6	31.3	32.8	34.4	34.7	33.4	33.1	32.4
21	32.4	33.2	32.2	32.2	32.1	31.9	32.5	33.8	33.1	32.2	32.2	32.1	32.5	32.1	32.1	31.6
22	31.7	30.9	30.8	30.7	31.0	31.1	31.7	31.1	31.0	31.1	32.2	33.9	33.8	33.8	33.0	32.2
23	31.1	31.1	31.5	31.4	31.1	31.0	30.8	30.8	29.8	29.2	30.7	32.0	32.6	32.6	32.2	32.0
24	31.7	32.0	31.4	31.9	31.7	31.9	30.8	29.4	29.1	29.2	31.7	33.4	33.8	33.7	33.0	32.3
25	31.7	31.9	...	...	...	31.5	30.5	29.2	29.7	31.1	32.7	34.2	35.1	33.9	32.6	32.0
26	31.8	31.6	31.4	31.4	31.4	31.8	31.9	30.5	29.9	29.7	30.8	33.9	35.2	34.9	33.5	32.0
27	31.8	31.9	31.8	31.9	...	...	...	...	...	...	...	33.4	33.4	33.1	32.1	31.6
28	31.8	31.8	31.8	31.8	31.6	31.8	31.9	30.8	30.2	29.3	30.6	33.4	33.7	33.4	32.4	31.2
Mean	31.44	31.42	31.43	31.34	31.31	31.29	31.22	31.00	30.72	31.00	32.00	33.18	33.18	32.77	32.18	31.6

JANUARY, 1898.

5p	6p	7p	8p	9p	10p	11p	M.N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
31.6	30.0	31.6	30.9	31.6	31.9	30.9	32.2	32.22	34.4	3.48 a	29.7	6.05 p	4.7	A
31.6	31.6	31.6	31.3	31.8	31.5	31.9	32.4	32.45	**35.9**	1.00 p	29.9	8.40 a	6.0	C
31.6	31.6	31.6	31.9	31.6	31.9	32.1	32.1	32.15	34.0	11.50 a	30.7	8.00 a	3.3	C
31.5	31.3	31.6	31.6	31.6	31.8	32.1	32.2	31.91	33.7	1.00 p	30.2	9.38 a	3.5	C
31.6	31.5	31.5	31.6	31.9	31.6	32.1	32.1	31.82	33.2	1.00 p	30.3	9.00 a	2.9	C
31.6	31.6	31.6	31.6	31.8	31.6	31.6	31.8	31.76	33.2	0.28 p	29.4	8.30 a	3.8	C
31.5	31.8	31.8	31.8	31.8	31.6	31.6	31.8	31.90	34.3	1.00 p	30.6	9.33 a	3.7	C
31.5	31.7	31.8	32.4	32.1	32.0	31.5	31.5	31.45	33.0	0.28 p	29.3	9.00 a	3.7	C
31.5	31.7	31.8	32.0	32.1	32.0	31.8	32.0	31.60	32.3	Noon	29.9	10.00 a	2.4	C
30.8	30.8	31.4	31.5	32.1	32.6	33.0	32.0	31.57	33.0	11.00 p	29.9	8.30 a	3.1	C
33.1	32.8	33.0	31.5	32.1	32.6	33.0	32.1	32.30	33.6	6.48 p	31.4	3a., 9a.	2.2	A
31.7	32.0	32.0	31.6	30.2	31.7	32.3	31.7	31.83	34.1	Noon	30.0	9.05 p	4.1	C
31.6	31.7	32.0	32.1	32.0	32.0	31.6	32.0	32.04	33.3	1.00 p	31.0	4.45 p	2.3	C
31.1	31.4	31.4	31.6	31.7	31.6	31.7	31.6	31.52	32.6	0.18 p	30.5	8.48 a	2.1	C
31.4	31.4	31.4	31.4	31.7	31.7	31.6	31.4	31.90	34.5	1.00 p	30.1	8.28 a	4.4	C
32.1	30.6	31.0	31.8	31.3	30.6	31.8	31.8	31.77	35.0	Noon	29.9	10.15 p	5.1	A a.m., S' p.m.
31.6	31.5	30.6	31.5	31.3	29.6	31.5	31.5	32.00	35.6	0.40 p	**28.4**	9.52 p	7.2	A
31.3	30.6	31.6	30.6	30.3	31.5	31.3	31.5	31.80	34.9	6.00 a	28.5	8.16 p	6.4	A
31.0	31.5	32.1	29.1	31.8	31.6	31.2	31.3	32.15	35.0	0.20 p	28.8	8.10 p	6.2	A
31.2	31.5	31.5	29.8	31.5	31.4	31.2	31.4	31.48	33.1	0.38 p	29.5	7.50 p	3.6	A
31.7	31 2	31.5	31.5	31.5	31.4	31.2	31.2	32.21	34.8	1.00 p	31.1	9.00 a	3.7	A a.m., C p m.
32.2	31.8	31.8	31.4	31.5	31.5	31.2	31.4	31.45	33.4	7.00 a	29.6	9.46 a	3.8	C
32.0	31.5	31.7	31.7	31.7	31.5	31.4	31.5	31.38	32.1	7.00 a	29.2	9.18 a	2.9	C
31.4	31.3	31.3	31.3	31.4	31.4	31.1	31.1	31.17	32.0	2.00 p	29.4	9.35 a	2.6	C
31.1	30.8	31.3	31.3	32.0	31.4	31.4	31.1	31.25	32.6	0.18 p	30.2	3.20 p	2.4	C
31.3	31.3	32.0	30.4	31.3	31.6	31.1	31.4	31.50	32.7	0.43 p	30.4	8.00 p	2.3	C a.m., A p.m.
31.0	31.3	31.6	31.4	31.7	31.7	31.9	31 1	31.44	33.3	Noon	30.5	2.00 a	2.8	C
30.1	30.3	30.7	31.5	31.0	31.3	31.5	31.5	31.33	33.0	Noon	29.6	5.12 p	3.4	C 0a.–2p., A 2–6p., C 6p.–M.N.
30.9	31.0	31.0	31.2	31.2	31.3	31.3	31.5	31.67	34.1	1.00 p	30.4	7.28 p	3.7	C
30.6	31.0	31.0	31.2	31.0	31.2	31.5	31.6	31.30	32.9	Noon	29.6	8.00 a	3.3	C
30.3	30.9	31.0	31.2	31.2	31.3	31.5	31.0	31.46	33.0	Noon	20.3	8.23 a	3.7	C
31.40	31.32	31.54	31.31	31.54	31.56	31.64	31.67	31.74	33.63		29.91		3.72	

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										h m		h m		
31.1	31.1	31.1	31.1	31.3	31.3	31.2	31.2	31.09	33.2	1.00 p	30.3	9.00 a	2.9	C
30.9	31.3	30.3	31.2	31.5	31.5	31.2	30.2	31.03	32.9	2.00 p	28.0	9.00 a	4.9	C
31.2	31.2	31.5	31.5	31.5	31.3	30.9	30.6	31.19	33.0	1.30 p	**25.0**	10.00 a	8.0	C
30.4	30.6	30.2	31.0	30.2	30.2	30.7	30.7	30.63	32.1	1.30 p	28.7	10.00 a	3.4	C
30.3	30.3	30.6	31.1	30.4	31.2	31.2	30.4	30.78	31.8	1.00 p	30.2	6.00 a	1.6	C
31.4	30.7	31.3	31.6	31.6	31.9	31.3	31.6	31.32	33.2	0.40 p	29.8	3.00 a	3.4	A 0–4a., C 4a.–M.N.
31.1	30.7	31.6	31.6	31.6	31.6	31.4	31.6	31.46	32.4	Noon	30.7	4a., 6p.	1.7	C
30.7	31.7	31.8	31.8	31.6	31.4	31.3	31.4	31.41	32.9	0.15 p	30.5	8a., 4p.	2.4	C
31.4	30.7	30.7	31.6	31.4	31.8	31.4	31.4	31.30	33.1	0.45 p	30.1	9.00 a	3.0	C
31.2	30.8	31.1	31.4	31.5	31.7	31.5	30.8	31.29	32.7	Noon	30.1	7.00 a	2.3	C
33.0	31.8	31.1	32.7	33.1	31.5	32.3	31.4	31.97	34.9	0.55 p	29.4	7.40 a	5.5	C a.m., A p,m.
31.7	30.5	30.6	29.7	30.8	32.3	33.2	32.7	32.42	**37.0**	11.50 a	29.2	8.02 p	7.8	A
31.7	31.7	30.8	31.5	31.9	31.6	31.7	31.9	32.20	33.5	9.15 a	30.8	7.00 p	2.7	A a.m., C p.m.
32.0	33.0	28.7	31.5	31.0	30.3	31.1	31.2	32.08	36.2	11.45 a	28.7	7.00 p	7.5	C 0–10a., A 10 a.–M.N.
32.0	31.2	31.8	31.2	31.3	32.0	31.3	31.7	31.97	34.6	No n	28.9	5.45 p	5.7	A
29.4	31.8	31.8	31.7	29.9	31.8	32.4	30.7	31.71	34.4	Noon	29.4	5.00 p	5.0	A
31.8	31.7	31.7	31.8	31.7	29.4	30.8	31.9	31.61	34.9	1.00 p	29.0	9.55 p	5.9	C 0a.–9p., A 9p.–M.N.
31.8	31.6	31.6	32.0	31.9	31.9	31.9	31.9	31.62	33.7	11.50 a	30.1	0.50 a	3.6	A 0–2a., C 2a.–M.N.
32.1	31.8	31.8	32.0	31.8	31.6	32.1	31.3	32.17	36.0	1.40 p	29.4	8.00 a	6.6	C
30.9	30.9	31.5	29.5	31.6	31.2	29.9	30.7	31.53	34.7	1.00 p	29.1	8.10 p	5.4	C a.m., A p.m.
30.9	30.7	31.8	32.1	31.9	30.7	30.9	31.7	32.04	34.0	7.55 a	28.1	5.20 p	5.9	A
31.1	31.5	32.2	32.2	32.0	31.9	32.0	31.0	31.82	34.1	0.20 p	30.5	2.25 a	3.6	C
31.7	31.5	31.9	31.9	31.1	32.0	32.0	32.0	31.42	33.0	1.30 p	29.8	9.00 a	3.2	C
31.9	31.0	31.1	31.4	32.2	31.9	31.7	31.9	31.67	34.1	1.12 p	28.8	8.50 a	5.3	C
31.1	31.5	31.5	32.0	31.9	31.9	32.0	32.0	31.90	...	...	...	...	...	C
31.1	31.1	31.6	32.0	32.0	31.8	31.9	31.8	31.87	35.2	1.00 p	29.3	10.07 a	5.9	C
30.8	31.2	31.8	31.9	31.9	31.6	31.1	31.9	31.95	...	...	...	...	...	C
30.6	30.8	31.0	31.2	31.3	31.2	31.6	31.0	31.51	33.9	1.30 p	29.3	10.00 a	4.6	C
21.28	31.21	31.19	31.47	31.47	31.42	31.50	31.33	31.58	33.90		29.35		4.55	

DECLINATION: 4°+ . .′ . W

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
1	31.8	31.4	31.2	30.9	31.1	31.1	30.8	29.5	28.9	28.3	30.8	33.5	33.6	33.0	32.4	31.5
2	31.4	31.4	31.2	31.2	30.9	30.8	30.8	28.9	27.1	26.8	28.0	32.9	33.8	34.8	35.0	36.3
3	31.6	31.6	31.8	31.8	32.1	31.9	31.8	31.9	21.8	31.8	33.2	34.3	34.6	34.0	33.0	31.7
4	32.2	31.9	31.9	31.3	31.3	31.2	30.6	29.3	28.8	28.8	30.9	32.8	34.6	34.1	33.0	31.8
5	31.6	31.4	31.2	31.3	31.7	31.8	31.2	30.1	29.4	29.4	31.0	33.8	35.3	34.7	33.0	31.3
6	31.6	31.6	32.2	32.4	32.5	32.4	30.9	28.7	28.1	28.8	31.3	34.2	35.0	34.8	33.3	31.7
7	30.7	31.0	31.7	32.2	32.2	32.1	31.7	29.1	28.5	27.9	30.4	33.5	34.5	34.4	33.4	32.1
8	31.5	31.5	31.5	31.7	31.7	30.8	30.4	28.6	27.6	28.0	29.9	32.5	34.0	34.2	33.4	32.1
9	31.4	31.5	31.0	31.2	31.4	32.1	31.0	30.1	29.8	30.2	32.1	35.9	36.5	36.5	35.4	33.6
10	31.2	31.4	31.5	31.5	31.7	31.7	31.5	29.4	26.6	26.1	29.2	33.9	35.1	35.9	35.4	34.6
11	31.4	31.6	31.6	31.0	31.3	31.6	31.6	28.8	27.2	26.6	29.0	33.0	34.4	35.0	33.8	33.4
12	30.7	30.3	30.9	32.2	31.1	32.4	32.0	31.6	28.4	27.7	29.7	33.8	35.8	36.1	33.9	32.6
13	31.6	32.4	32.2	31.6	31.6	32.1	30.2	29.0	25.3	26.3	29.1	33.7	36.4	37.3	35.2	32.7
14	31.9	31.9	31.7	31.9	31.9	32.2	30.7	29.3	28.4	28.7	21.4	34.5	36.2	35.8	33.8	32.0
15	31.3	31.1	31.1	30.9	31.4	30.9	30.4	...	...	...	...	39.8	38.8	37.2	35.3	35.1
16	29.3	31.9	27.5	25.9	31.8	35.9	36.5	47.2	45.7	38.5	40.0	40.0	39.4	38.7	37.6	31.2
17	34.6	33.1	33.2	33.4	33.8	33.7	33.5	31.0	29.4	29.0	30.8	32.7	34.4	35.0	34.3	33.4
18	32.7	32.8	32.1	32.1	32.9	33.7	32.5	30.8	27.8	27.8	29.6	33.4	35.3	35.5	34.9	33.7
19	30.4	32.9	30.9	30.9	32.1	33.8	31.2	30.8	29.6	29.6	32.3	33.8	34.2	35.2	34.5	32.9
20	31.3	30.9	31.8	31.2	31.7	32.2	33.6	30.7	28.8	29.8	32.4	35.5	36.5	36.4	34.9	32.7
21	32.2	32.2	32.5	32.0	32.0	31.9	30.5	29.2	28.9	30.2	32.3	34.8	35.0	35.1	33.9	33.0
22	31.7	31.5	32.0	32.2	32.0	32.0	30.4	29.5	28.5	29.2	30.5	34.4	35.1	35.2	33.5	33.0
23	32.2	32.0	31.9	31.6	31.3	31.9	30.8	29.1	28.5	30.3	33.0	35.0	35.2	35.0	34.7	33.6
24	32.2	32.2	32.3	32.2	32.3	32.4	31.7	30.2	29.2	29.5	31.0	33.4	34.5	34.7	33.9	33.0
25	32.2	32.2	31.8	32.0	32.0	32.2	32.2	30.4	28.9	29.2	30.5	33.6	36.1	36.4	35.1	33.6
26	32.4	32.2	32.2	32.7	33.3	33.5	32.0	30.5	29.2	28.9	31.4	32.2	33.6	35.0	33.5	32.3
27	30.7	30.9	31.6	31.4	31.3	31.9	30.7	29.1	27.9	28.8	30.6	32.6	34.3	35.0	35.0	33.2
28	31.7	30.7	31.7	31.9	31.6	31.7	30.4	29.0	28.4	29.1	30.4	32.2	33.4	34.0	33.5	32.2
29	31.6	31.7	31.6	31.4	31.9	32.0	30.6	29.4	27.9	29.1	31.9	34.6	35.8	35.2	34.8	33.4
30	31.3	31.6	31.6	31.3	31.1	31.0	30.4	29.4	28.8	29.4	31.1	35.0	36.3	36.3	34.4	33.5
31	31.4	31.6	31.1	31.1	30.9	31.3	30.9	30.1	29.3	30.4	33.1	35.8	36.3	35.2	33.8	32.6
Mean	31.62	31.71	31.58	31.52	31.82	32.18	31.44	30.36	29.09	29.14	31.23	34.04	35.17	35.28	34.21	32.82

DECLINATION: 4°+ . .′ . W

1	31.2	31.2	30.9	30.3	31.1	29.9	29.6	28.7	27.5	28.6	31.2	32.8	34.9	34.5	32.7	31.8
2	31.5	31.1	31.2	31.1	31.1	31.4	30.2	29.2	27.5	29.0	31.7	34.4	35.6	35.6	34.3	33.1
3	31.2	31.1	31.2	31.4	31.4	31.1	30.0	28.0	27.1	28.3	28.4	31.2	33.2	33.9	33.6	32.8
4	31.4	31.2	31.2	31.1	31.4	31.4	30.0	27.8	27.0	27.5	29.3	32.7	34.8	35.2	34.8	33.9
5	29.0	30.6	31.1	30.9	30.2	31.1	29.8	28.7	28.4	20.9	32.8	32.8	33.3	33.7	33.3	32.4
6	30.7	30.8	30.4	30.5	29.8	30.4	29.6	28.8	28.9	30.8	32.4	34.7	35.2	34.7	34.1	32.6
7	30.8	29.9	29.8	29.2	28.9	29.8	29.6	28.2	28.5	30.5	32.7	35.5	36.3	36.1	34.7	34.2
8	30.7	28.9	29.9	29.8	31.3	30.7	31.4	31.7	31.7	31.9	32.6	33.8	35.4	35.5	33.8	32.4
9	31.3	31.3	31.1	31.0	31.6	31.4	31.3	30.1	30.1	30.7	32.4	34.7	35.4	34.4	33.5	32.4
10	31.9	32.0	32.2	32.3	31.4	32.0	31.0	29.7	28.9	39.5	31.9	33.6	35.4	36.2	34.7	33.5
11	31.7	31.7	31.6	32.0	32.2	31.6	30.4	28.9	29.1	30.8	32.4	33.9	35.4	35.5	34.2	32.6
12	31.7	31.6	31.7	31.4	31.3	31.0	29.7	27.7	27.4	29.8	31.7	34.7	35.7	35.5	35.8	35.1
13	...	...	...	...	...	...	...	...	...	...	...	37.0	35.7	35.7	35.4	34.4
14	31.9	30.8	30.8	31.0	30.5	30.1	29.1	28.2	28.9	...	...	35.5	35.4	33.9	32.9	32.7
15	...	30.4	30.2	30.4	29.9	28.3	28.2	28.2	28.9	31.9	33.3	32.3	31.9	30.4	28.9	28.9
16	...	...	...	...	...	...	...	...	...	...	...	33.5	33.3	32.6	32.6	31.9
17	30.4	30.4	...	...	...	...	...	...	...	...	...	33.3	33.2	32.6	31.9	31.9
18	...	...	...	...	...	28.9	26.7	26.0	...	...	...	34.7	33.3	33.5	33.2	32.2
19	...	...	30.8	31.9	31.0	30.4	29.4	28.2	28.2	29.7	31.4	32.4	33.3	33.6	32.9	32.0
20	31.1	31.6	31.0	31.1	31.1	30.1	29.3	27.9	28.9	30.4	32.7	34.5	34.7	34.1	32.6	32.4
21	32.7	32.6	31.9	...	...	...	...	...	...	...	...	33.6	33.9	33.8	33.9	31.3
22	31.1	31.1	31.1	31.1	31.1	29.9	28.9	28.6	29.2	30.5	31.9	31.6	33.2	32.6	29.5	31.1
23	30.7	31.1	30.7	31.1	31.1	30.2	28.9	27.4	28.2	...	...	31.6	33.3	34.1	33.3	33.3
24	31.9	32.2	32.2	31.6	31.9	30.7	28.9	27.4	28.9	30.4	33.3	33.3	33.9	32.9	32.0	32.4
25	30.4	...	...	...	...	...	...	...	...	...	...	28.6	29.2	39.8	29.9	29.7
26	29.7	29.8	29.7	29.7	30.4	29.7	28.8	28.2	28.0	29.4	31.1	32.3	33.5	33.9	33.3	33.0
27	31.1	30.8	30.7	31.4	31.4	30.8	29.8	28.8	27.8	28.6	30.3	32.9	34.5	35.3	34.5	33.0
28	30.8	30.8	29.4	29.4	29.4	29.4	28.5	26.6	27.9	29.4	33.0	33.9	34.3	35.5	34.3	33.8
29	31.1	31.0	30.8	31.3	30.7	30.0	28.9	27.9	28.5	30.7	32.9	34.5	35.8	35.1	34.1	31.9
30	31.4	31.4	31.3	31.1	30.8	29.1	27.9	27.9	29.1	31.4	33.9	35.4	36.0	35.1	33.5	32.3
Mean	31.03	30.97	30.88	30.86	30.91	30.55	29.68	28.58	28.58	29.97	31.94	33.61	34.78	34.73	33.55	32.72

MARCH, 1898.

5p	6p	7p	8p	9p	10p	11p	M. N.	Mean	Maximum	h m	Minimum	h m	Range	Remarks
31.4	31.2	31.2	31.5	31.5	31.5	31.5	31.5	31.30	33.6	1.00 p	28.3	10.00 a	5.3	C
37.8	37.7	33.7	32.9	32.7	33.0	32.3	32.2	32.23	38.6	5.25 p	26.8	10.00 a	11.8	C 0-6a., A 6a.-M.N.
31.2	31.8	32.1	32.2	32.1	32.1	32.2	31.6	32.26	34.6	1.00 p	31.2	5.00 p	3.4	C
31.0	31.4	31.8	32.1	31.8	31.8	31.6	31.9	31.58	34.6	1.00 p	28.5	9.20 a	6.1	C
30.9	30.9	31.2	31.3	31.6	31.9	31.3	31.6	31.62	35.3	1.00 p	29.0	10.10 a	6.3	C
30.9	32.5	32.4	32.1	31.6	30.9	30.9	30.6	31.72	35.0	1.00 p	28.1	9.00 a	6.9	A
31.0	31.2	31.7	31.9	32.1	32.1	31.9	31.3	31.61	34.5	1.00 p	27.9	10.00 a	6.6	C
31.0	31.2	31.5	31.8	31.7	31.0	31.4	31.4	31.27	34.5	1.28 p	27.6	9.00 a	6.9	C
32.2	32.0	32.2	32.0	32.0	31.9	31.7	30.5	32.22	36.6	0.18 p	29.5	8.43 a	7.1	C
32.5	32.2	32.0	31.7	31.9	32.2	31.7	31.5	31.77	36.1	2.30 a	26.1	10.00 a	10.0	C a.m., A p.m.
31.8	31.4	31.9	31.4	31.9	29.4	30.9	32.6	31.36	35.0	2.00 p	26.4	10.13 a	8.6	A
31.3	31.6	31.7	31.0	31.9	32.4	31.6	31.7	31.77	36.6	1.16 p	27.7	10.00 a	8.9	A
31.6	31.7	31.4	31.7	31.7	32.0	31.9	32.0	31.70	37.5	1.34 p	**25.0**	9.12 a	12.5	A
30.7	31.0	31.6	31.4	31.4	31.9	31.7	31.3	31.80	36.2	1.00 p	27.9	9.17 a	8.3	C
33.6	32.2	33.8	33.1	32.7	33.2	30.9	27.3	...	...	...	...	...	...	C 0-10a. S² 10a.-M.N.
32 9	32.5	31.9	31.8	31.3	30.4	30.4	30.6	34.54	**43.6**	9.07 a	25.1	2.45 a	23.5	S²
31.8	32.1	32.3	32.3	32.4	32.4	32.4	32.3	32.64	35.6	1.10 a	29.0	10.00 a	6.6	A a.m., C p.m.
32.4	31.5	31.8	32.1	32.1	32.3	32.1	32.5	32.27	35.5	2.00 p	27.7	9.30 a	7.8	A
32.4	32.4	32.3	31.9	30.8	31.5	30.8	29.4	31.94	35.2	2.00 p	29.3	11.30 p	5.9	A
32.5	32.1	32.3	31.2	31.8	30.4	31.5	32.1	32.26	36.8	2.35 p	28.4	9.10 a	8.4	A
32.2	31.4	32.2	32.0	32.2	32.3	31.9	31.5	32.16	35.5	1.50 p	28.9	9.00 a	6.6	C
32.0	32.0	32.2	32.2	32.2	32.3	32.0	31.4	31.96	35.2	2.00 p	28.5	9.00 a	6.7	C
32.7	32.0	32.3	32.3	32.3	32.2	32.2	32.2	32.26	35.2	1.00 p	28.5	9.00 a	6.7	C
32.2	32.2	32.3	32.2	32.2	30.4	32.0	32.3	32.10	34.7	2.00 p	28.9	8.55 a	5.8	C
33.5	33.6	32.9	32.1	32.3	32.2	32.2	32.4	32.48	36.4	2.00 p	28.9	9.00 a	7.5	C
31.2	31.2	32.0	31.4	32.0	31.7	31.2	31.7	32.01	35.1	1.40 p	28.9	10.00 a	6.2	A
31.9	32.0	32.7	32.0	32.2	32.7	32.7	31.8	31.79	35.7	2.35 p	27.9	9.00 a	7.8	A
31.9	32.2	32.8	33.2	31.7	31.6	31.6	31.6	31.60	34.0	2.00 p	27.5	8.45 a	6.5	C
32.2	32.4	32.5	32.2	32.5	31.9	32.0	32.0	32.11	36.3	1.20 p	27.5	9.12 a	8.8	C
33.4	33.2	32.5	32.1	31.9	32.1	32.2	31.7	32.15	36.5	1.25 p	28.8	9.00 a	7.7	C
31.7	31.7	31.9	31.9	31.9	31.9	31.9	31.6	32.06	36.6	1.10 p	29.3	9.00 a	7.3	C
32.07	32.08	32.11	31.93	31.92	31.75	31.72	31.63	32.02	36.05		28.10		7.95	

APRIL, 1898.

5p	6p	7p	8p	9p	10p	11p	M. N.	Mean	Maximum	h m	Minimum	h m	Range	Remarks
30.9	31.2	31.7	31.2	32.0	32.0	31.2	31.4	31.19	34.9	1.00 p	27.5	9.00 a	7.4	C
31.8	31.2	31.5	31.7	32.0	31.8	31.8	31.8	31.73	35.8	1.30 p	27.5	9.00 a	8.3	C
32.3	31.8	32.0	32.3	32.0	32.0	32.0	31.7	31.25	34.0	2.06 p	27.1	9.00 a	6.9	C
33.1	32.4	32.6	32.3	32.4	32.3	31.8	31.0	31.61	35.2	2.00 p	26.5	9.28 a	8.7	A
32.0	32.1	32.0	32.0	31.7	31.5	31.5	30.8	31.36	33.7	2.00 p	27.4	8.50 a	6.3	A a.m., C p.m.
32.0	31.9	32.3	32.1	32.0	32.2	32.0	31.5	31.68	35.2	1.00 p	28.2	8.30 a	7.0	C
33.6	35.2	33.1	32.7	30.4	32.2	32.0	30.4	31.85	**36.9**	2.34 p	28.2	8.00 a	8.7	A
31.4	30.4	31.3	31.2	31.6	31.4	31.6	31.6	31.75	35.5	2.00 p	28.9	2.00 a	5.8	A
31.9	31.9	31.6	31.3	31.9	31.9	31.9	31.6	31.95	35.4	1.00 p	29.5	9.48 a	5.9	C
31.9	31.0	31.9	31.8	30.4	31.1	31.5	31.9	31.99	36.2	2.00 p	28.9	9.00 a	7.3	C
30.8	31.0	31.4	31.6	31.9	31.6	31.4	31.4	31.88	35.7	1.47 p	28.8	8.30 a	6.9	C
34.1	34.1	34.5	33.3	...	...	...	...	...	36.3	2.13 p	27.4	9.00 a	8.9	C a.m., S' p.m.
33.3	32.4	32.3	32.6	32.6	31.3	32.0	31.6	...	...	...	...	...	...	A
30.7	32.3	33.3	...	...	...	...	...	...	...	...	...	...	...	A
28.9	29.2	29.2	29.5	29.4	28.8	29.1	28.2	...	33.3	11.00 a	27.0	7.30 a	6.3	A
30.4	31.9	31.1	31.6	31.1	30.4	31.1	30.4	...	...	...	...	...	...	A
30.4	30.4	30.4	...	...	...	...	...	...	...	...	...	...	...	C
31.9	31.9	32.0	32.6	32.6	32.7	...	...	...	...	...	...	...	...	C
31.3	31.9	31.9	31.9	32.2	32.0	31.9	31.7	...	33.6	2.00 p	27.9	8.28 a	5.7	C
29.9	29.8	33.6	33.9	33.6	33.6	33.3	32.9	31.84	34.7	1.00 p	27.9	8.00 a	6.8	C
31.0	31.1	31.7	31.9	31.9	31.9	31.9	31.4	...	...	...	...	...	...	C
30.4	30.2	30.2	30.7	30.5	30.8	31.1	30.7	30.71	33.2	1.00 p	28.2	7.30 a	5.0	C
33.2	33.3	32.6	32.7	32.9	32.6	32.2	31.9	...	34.1	2.00 p	27.4	8.00 a	6.7	C
30.4	30.4	31.0	31.0	31.1	31.1	31.1	31.0	31.29	33.9	1.00 p	27.2	7.43 a	6.7	C
29.8	29.7	29.9	30.2	28.9	29.7	30.1	29.5	...	...	...	...	...	...	C
31.2	31.6	31.6	31.6	31.2	32.3	31.7	31.4	30.96	34.1	1.45 p	28.0	9.00 a	6.1	C
31.6	31.1	31.6	31.6	31.6	31.6	31.6	31.3	31.40	35.3	2.00 p	27.8	9.00 a	7.5	C
32.5	31.6	31.6	32.0	31.6	31.6	31.6	31.6	31.27	35.5	2.00 p	**26.0**	8.27 a	9.5	A
31.6	31.6	31.2	31.1	31.9	31.2	32.3	31.6	31.57	35.8	1.00 p	27.9	8.00 a	7.9	C
30.8	30.8	31.4	31.6	31.3	31.6	31.6	31.3	31.58	36.0	1.00 p	27.5	7.42 a	8.5	C
31.58	31.43	31.77	31.77	31.64	31.78	31.74	31.42	31.52	35.11		27.84		7.27	

DECLINATION: 4°+ . ′ . W

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
1	30.8	30.7	30.4	29.8	29.7	27.3	26.3	26.6	30.1	33.0	34.1	35.0	33.8	33.8	33.0	31.6
2	...	...	...	...	...	...	28.2	29.2	29.4	31.6	31.5	35.5	35.1	33.8	32.3	31.6
3	31.4	31.4	31.4	31.3	30.1	28.6	27.9	28.6	30.0	32.3	34.8	35.4	35.1	33.5	32.6	32.3
4	30.8	30.6	30.1	30.1	29.4	29.2	29.2	28.5	30.4	31.6	34.5	35.7	34.5	35.3	35.7	34.8
5	31.6	31.6	31.0	30.6	30.6	29.2	29.1	29.5	29.8	33.2	34.2	35.7	37.0	36.4	33.6	34.5
6	31.4	31.1	30.8	31.6	31.0	30.4	30.3	28.9	29.7	30.8	32.3	32.3	33.0	32.6	32.2	29.4
7	29.8	29.4	29.4	29.4	29.4	29.1	27.8	27.0	27.8	30.1	31.0	32.5	33.8	33.5	32.6	31.1
8	29.8	30.7	30.7	30.8	30.8	30.1	29.4	29.2	29.8	30.7	33.0	33.9	35.3	35.5	33.8	33.0
9	31.3	31.1	31.0	30.8	30.7	29.8	29.1	28.9	29.5	...	...	31.1	33.0	33.0	33.2	35.3
10	31.3	31.1	30.8	30.4	30.8	30.8	31.1	31.0	30.1	29.4	30.1	32.3	34.1	34.8	35.7	34.5
11	33.0	32.3	...	...	...	32.8	32.3	31.9	33.8	31.9	33.2	35.3	35.5	35.3	34.5	33.8
12	31.4	31.4	32.9	32.3	32.5	31.4	31.6	31.6	...	...	...	...	31.6	32.3	31.3	29.4
13	30.1	30.1	30.1	29.8	30.1	31.6	32.0	31.6	32.3	32.3	35.3	35.7	35.6	35.3	34.5	33.8
14	33.3	33.0	32.8	32.8	32.0	30.8	30.6	31.6	33.3	35.1	36.7	...	...	...	...	...
15	...	...	...	...	...	...	...	...	...	...	...	35.9	36.6	35.9	33.7	32.5
16	32.5	32.2	31.8	31.5	30.7	30.0	28.5	29.3	30.3	31.2	33.7	35.2	35.7	35.2	34.0	32.9
17	32.7	32.2	31.9	31.5	30.7	29.3	29.1	29.4	31.3	32.5	34.3	35.2	35.9	35.2	34.7	34.4
18	32.9	32.7	32.7	32.7	32.2	30.7	29.3	29.4	30.3	32.2	34.1	35.2	35.4	35.7	35.4	33.4
19	32.2	31.9	32.2	31.9	31.6	30.7	29.3	28.5	29.9	31.9	34.1	35.2	35.9	35.2	34.4	33.7
20	32.7	32.5	31.9	31.8	30.7	29.1	28.2	29.0	30.7	32.9	34.4	36.5	35.9	35.2	33.7	32.9
21	32.5	32.2	32.2	32.2	31.5	30.5	29.4	29.3	30.3	31.5	33.5	35.4	35.6	35.9	34.9	34.0
22	32.8	32.8	32.1	32.6	32.1	31.2	29.8	28.7	29.2	30.2	31.7	33.6	35.2	35.8	35.3	33.6
23	31.4	31.2	31.4	31.4	32.0	30.6	30.2	29.4	31.5	33.9	35.8	37.0	37.0	36.1	34.9	33.6
24	31.4	31.4	31.4	31.4	30.9	29.5	27.7	26.2	27.3	29.2	30.6	32.8	34.3	34.0	33.6	32.1
25	30.6	31.2	30.9	30.6	29.9	27.0	25.5	24.9	25.5	28.0	30.5	...	...	...	...	...
26	...	...	...	...	...	...	...	...	...	...	...	37.1	37.8	37.3	35.6	33.4
27	32.1	32.0	32.1	32.3	32.0	30.6	29.2	27.7	28.7	29.8	32.1	34.8	35.8	35.8	35.1	34.2
28	32.1	32.0	32.0	31.8	29.9	28.4	28.4	29.8	31.4	33.0	33.6	35.8	36.2	35.1	34.2	33.3
29	32.0	31.6	31.1	31.3	30.5	29.1	28.9	30.4	31.7	33.5	35.0	35.4	36.3	...	...	...
30	29.5	30.7	31.3	29.5	28.8	28.3	29.7	31.4	34.1	35.4	36.0	36.4	38.6	36.3	36.4	35.7
31	31.0	31.3	31.1	31.9	30.4	31.3	31.7	31.7	32.7	34.1	35.5	35.7	36.3	35.4	35.1	33.8
Mean	31.52	31.48	31.35	31.26	30.75	29.96	29.40	29.24	30.36	31.82	33.55	34.87	35.53	35.13	34.40	33.38

DECLINATION: 4°+ . ′ . W

1	32.0	32.0	32.0	31.3	30.5	30.5	29.8	29.1	29.8	32.3	34.2	35.0	35.7	35.0	33.5	32.7
2	32.0	31.5	31.3	31.3	29.8	28.5	28.3	28.6	30.5	31.3	33.3	35.0	35.7	35.0	33.5	33.5
3	32.0	32.0	31.7	31.3	30.7	29.4	28.2	27.6	29.1	31.6	34.1	36.1	36.4	36.0	34.8	33.2
4	30.5	31.3	31.3	31.3	30.4	29.4	28.2	28.5	28.9	30.8	32.7	34.2	35.7	35.7	35.2	33.5
5	31.3	31.3	31.1	31.1	31.3	29.8	27.6	27.9	29.2	30.1	33.5	34.2	35.0	35.0	34.2	32.7
6	31.7	31.9	32.0	32.0	31.3	30.4	28.8	28.2	29.1	32.0	35.0	33.3	34.5	35.4	34.8	33.3
7	31.6	31.2	31.0	31.0	30.4	29.6	27.5	26.0	27.5	29.7	32.3	33.4	34.9	34.2	35.1	36.5
8	...	...	...	...	...	...	30.4	29.6	29.3	29.7	31.2	33.4	34.1	34.9	35.6	34.3
9	31.8	31.9	32.2	31.3	30.9	31.0	29.1	29.0	29.3	30.4	32.6	34.1	34.9	34.8	34.2	33.4
10	...	...	...	...	...	...	28.8	28.4	28.5	30.7	32.5	35.1	34.7	34.4	33.4	33.2
11	31.6	31.9	32.4	31.2	30.7	30.4	29.6	30.4	30.7	32.2	35.4	37.8	37.1	35.6	34.6	33.4
12	32.6	32.5	32.5	32.6	32.4	31.8	31.2	31.2	31.2	32.6	34.2	34.9	35.6	35.6	34.2	33.2
13	32.4	32.2	31.5	31.6	31.2	30.4	29.6	29.7	29.7	31.2	33.2	34.9	35.4	34.9	34.2	33.2
14	32.5	32.3	31.4	31.7	31.1	30.5	30.3	30.9	30.3	33.5	34.9	35.9	35.0	35.8	34.0	33.9
15	32.3	32.1	31.8	31.8	30.1	29.8	29.6	30.3	30.6	32.7	34.0	35.5	34.8	35.3	34.5	33.4
16	32.5	32.3	32.4	31.1	29.9	29.2	28.7	28.9	30.3	32.5	34.3	34.8	36.1	35.8	34.8	34.0
17	32.4	32.1	32.3	32.4	31.5	30.3	28.9	28.6	29.6	31.8	34.0	34.8	35.5	35.3	34.8	33.7
18	32.3	32.0	31.7	31.7	31.1	29.6	28.7	29.3	30.2	30.3	31.1	33.7	34.8	35.5	35.0	34.5
19	32.5	31.8	31.7	31.1	31.1	30.6	29.9	29.6	29.3	29.5	31.8	33.3	33.4	34.8	34.3	34.1
20	31.9	31.7	31.1	30.5	29.6	29.0	29.9	31.1	32.8	33.3	33.9	35.0	35.0	34.8	33.3	32.5
21	32.1	32.1	32.1	31.9	31.9	30.8	30.1	31.1	32.4	33.3	34.0	34.8	34.6	34.3	33.3	32.5
22	32.1	32.0	31.9	31.9	31.1	30.3	29.9	29.9	30.2	31.5	32.5	34.8	35.0	35.0	34.6	33.6
23	32.2	31.3	31.4	31.6	31.7	29.7	29.5	30.2	32.4	33.9	34.0	36.1	36.9	35.4	34.7	33.9
24	31.7	31.4	31.7	31.6	31.1	30.1	29.2	29.8	30.5	31.7	32.2	33.2	34.5	34.9	34.4	33.6
25	31.0	31.0	30.7	30.8	30.5	30.2	29.1	29.2	29.5	31.6	33.2	34.7	34.7	34.2	34.0	34.0
26	31.7	31.0	31.0	30.2	31.0	30.1	31.0	29.5	29.5	32.2	34.2	34.5	36.3	35.4	35.7	34.4
27	32.4	31.7	31.0	30.8	30.8	30.5	30.8	31.0	32.4	35.4	36.1	36.9	36.9	36.6	36.3	34.2
28	32.4	32.4	32.4	32.4	31.7	31.7	31.0	29.4	29.5	31.6	34.0	35.4	36.9	36.6	35.7	34.7
29	32.0	31.9	31.7	31.7	31.4	31.0	30.2	29.8	29.5	30.5	32.9	34.9	36.1	36.9	35.5	34.7
30	32.3	32.3	31.9	31.9	30.2	30.2	29.5	30.2	31.3	33.2	34.4	36.1	35.8	36.1	35.4	34.4
Mean	32.01	31.85	31.71	31.49	30.93	30.19	29.51	29.59	30.29	31.96	33.69	34.96	35.49	35.40	34.57	33.64

MAY, 1898.

5p	6p	7p	8p	9p	10p	11p	M.N.	Mean	Maximum	h m	Minimum	h m	Range	Remarks
30.8	30.8	30.1	31.6	31.6	...	...	...	...	35.0	Noon	26.3	7.00 a	8.7	A
30.8	31.6	31.6	32.3	32.2	31.7	32.2	31.6	...	35.5	Noon	28.2	7.00 a	7.3	A
32.2	32.8	32.8	32.7	32.3	31.9	30.4	30.4	31.76	35.4	Noon	27.8	6.50 a	7.6	C
32.2	35.3	31.7	32.9	33.0	32.7	32.3	32.2	32.20	36.9	4.35 p	28.1	8.22 a	8.8	A a.m., S· p.m.
33.5	32.7	32.8	33.0	32.1	32.2	31.6	31.6	32.38	38.9	1.21 p	28.5	7.25 a	10.4	A
29.4	29.4	31.3	29.4	30.0	30.1	30.1	29.7	30.72	33.3	0.53 a	28.8	7.48 a	4.5	C
30.1	30.1	30.1	30.1	30.1	30.8	30.8	30.8	30.27	33.8	1.00 p	27.0	8.00 a	6.3	C
32.3	32.0	32.0	31.9	32.0	32.3	31.7	31.7	31.77	36.0	1.30 p	28.9	8.15 a	7.1	C
35.3	34.4	32.6	31.9	32.0	31.9	31.6	31.7	...	35.3	4p, 5p	28.9	8.00 a	6.4	C
34.5	34.5	33.8	32.8	32.9	32.9	32.8	33.0	32.31	35.7	3.00 p	29.4	10.00 a	6.3	C
33.8	34.2	34.5	33.0	32.3	31.9	32.3	32.0	...	35.5	1.00 p	31.9	8a, 10a	3.6	A
28.6	28.6	29.4	30.1	28.3	29.4	29.4	29.7	...	32.9	3.00 a	28.3	6.00 p	4.6	A
33.0	32.5	33.3	33.0	32.0	32.6	33.5	33.5	32.65	36.3	11.50 a	28.5	2.30 a	7.8	A
...	...	...	...	...	...	...	...	...	...	...	...	...	...	C a.m.
31.3	32.9	32.9	32.9	32.9	32.8	32.7	32.8	...	...	...	...	...	...	C p.m.
32.7	32.5	32.9	32.2	31 8	32.8	32.9	32.8	32.30	35.7	1.00 p	28.5	7.00 a	7.2	C
33.7	32.9	32.9	32.9	33.3	33.5	33.4	32.9	32.74	35.9	1.00 p	29.1	7.00 a	6.8	C
33.7	32.9	32.9	31.9	32.2	32.9	32.9	32.8	32.77	35.9	2.20 p	29.1	7.25 a	6.8	C
33.2	32.9	33.4	33.2	33.2	33.2	32.9	32.8	33.64	35.9	1.00 p	28.5	8.00 a	7.4	C
32.1	32.2	32.7	32.5	32.8	32.9	32.8	32.7	32.45	36.5	Noon	28.2	7.00 a	8.3	C
32.9	32.9	32.7	32.9	32.9	33.5	33.4	32.9	32.71	35.9	2.00 p	29.1	7.19 a	6.8	C
32.4	32.1	32.1	32.6	32.4	32.7	32.4	32.1	32.31	35.8	2.00 p	28.7	8.00 a	7.1	C
33.3	32.3	32.6	32.3	32.1	32.1	32.1	32.1	32.76	37.0	N.-1p	30.1	6.48 a	6.9	C
30.3	29.4	30.6	30.8	30.6	31.4	31.4	31.1	30.81	34.5	1.24 p	**26.2**	8.00 a	8.3	C
...	...	...	...	...	...	...	...	...	...	...	...	...	...	C
32.7	32.1	32.6	32.7	32.7	32.7	32.8	32.7	...	...	...	...	...	...	C
32.7	32.1	32.6	32.1	33.4	33.0	32.8	32.7	32.32	35.8	1p, 2p	37.7	8.00 a	8.1	C
33.4	32.8	32.7	32.8	32.1	32.4	32.4	32.3	32.41	36.2	1.00 p	28.4	6a, 7a	7.8	A a.m., C p.m.
...	...	33.2	33.3	33.9	33.3	32.5	31.9	...	36.3	1.00 p	28.9	7.00 a	7.4	A
34.8	33.5	34.2	29.1	32.7	32.7	32.0	32.5	32.90	**39.1**	1.24 p	27.6	5.12 a	11.5	A a.m., S· p.m.
32.7	32.0	30.5	32.7	32.7	33.2	32.7	32.2	32.82	36.3	1.00 p	29.7	4.25 a	6.6	S· a.m., A p.m.
32.62	32.37	32.41	32.09	32.22	32.47	32.25	32.13	32.19	36.04		28.47		7.57	

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5p	6p	7p	8p	9p	10p	11p	M.N.	Mean	Maximum	h m	Minimum	h m	Range	Remarks
32.0	32.0	32.0	32.0	30.5	32.0	32.0	30.5	32.02	35.8	1.18 p	28.6	7.30 a	7.2	A
32.7	32.7	32.0	32.0	32.6	32.0	32.0	32.0	31.96	35.8	0.55 p	27.3	7.44 a	8.5	A
32.0	31.3	31.3	31.0	30.5	31.3	30.7	31.3	31.82	36.6	1.34 p	27.3	7.38 a	9.3	C
32.6	32.0	31.7	32.0	31.9	31.7	31.7	31.6	31.78	35.8	1.30 p	28.2	7.00 a	7.6	C
32.3	31.7	31.3	31.3	31.3	31.3	31.7	31.7	31.58	35.1	1.40 p	27.6	7.00 a	7.5	C
32.0	31.6	31.6	32.0	31.6	31.6	31.9	31.7	31.99	35.4	2.00 p	28.2	8.00 a	7.2	C
35.4	34.9	32.6	31.9	31.2	32.6	...	...	...	36.8	3.33 p	**26.0**	8.00 a	10.8	A
32.5	31.8	32.1	31.6	30.3	31.9	31.9	31.8	...	35.6	3.00 p	29.3	9.00 a	6.3	A
32.6	31.9	31.2	31.6	31.8	32.4	32.2	31.9	31.94	34.9	1.00 p	28.7	7.40 a	6.2	A
32.6	32.6	32.9	33.2	32.6	33.2	33.1	33.1	...	35.1	Noon	28.4	8.00 a	6.7	C
32.6	34.2	32.5	32.6	32.9	32.9	32.6	32.6	32.83	**37.9**	0.30 p	28.8	6.48 a	9.1	A
32.8	33.1	32.6	22.2	32.6	32.6	32.6	32.6	32.89	35.9	1.30 p	30.6	7.35 a	5.3	C
31.9	31.9	32.2	32.6	32.9	32.9	32.5	32.6	32.28	35.4	1.00 p	29.1	7.30 a	6.3	C
33.1	33.0	32.8	32.5	32.5	32.5	32.5	32.4	32.72	35.9	Noon	29.6	7.15 a	6.3	C
33.1	33.6	33.0	33.0	32.5	30.3	33.0	32.5	32.48	35.5	Noon	29.5	6.28 a	6.0	C a.m., A p.m.
32.5	31.2	32.5	32.5	32.5	32.8	33.0	33.0	32.40	36.1	1.00 p	28.7	7.00 a	7.4	A
33.3	33.1	33.0	32.8	32.5	32.5	32.5	32.8	32.52	35.6	1.34 p	28.6	8.00 a	7.0	C
33.3	32.8	32.5	32.5	32.4	32.1	32.5	32.1	32.15	35.5	2.00 p	28.7	7.00 a	6.8	C
34.1	33.3	33.6	33.7	32.5	32.3	32.5	31.9	32.20	34.8	2.00 p	29.0	7.42 a	5.8	A
32.5	32.8	32.5	32.5	32.5	33.0	32.5	32.5	32.34	35.0	N.-1p	28.9	6.25 a	6.1	C
32.5	32.4	32.3	32.3	32.5	32.5	32.5	32.3	32.52	34.8	Noon	30.1	7.00 a	4.7	C
32.5	32.4	32.3	32.1	32.5	32.4	32.5	32.5	32.31	35.5	1.30 p	29.9	7a, 8a	5.6	C
33.9	32.4	33.2	33.2	32.4	32.7	33.0	32.3	32.83	37.3	0.30 p	38.2	6.07 a	9.1	A
33.2	33.2	33.2	33.2	32.4	32.3	32.2	31.8	32.21	34.9	2.00 p	28.8	6.42 a	6.1	A a.m., C a.m.
34.0	33.6	33.2	32.7	33.2	33.2	32.4	32.0	32.20	34.7	N.-1p	28.9	7.12 a	5.8	C
33.2	32.4	33.0	31.7	31.7	31.7	32.4	32.9	32.36	37.2	1.24 p	28.6	5.36 a	8.6	S·
33.0	32.7	31.7	32.4	33.2	31.7	32.4	31.7	33.02	37.3	2 18 p	30.1	6.27 a	7.2	S·
32.4	32.4	33.0	33.0	33.2	32.7	32.9	32.4	32.91	36.9	1.00 p	28.6	8.12 a	8.3	A
34.4	32.4	32.4	32.4	32.9	32.6	32.4	32.2	32.60	36.9	2.00 p	29.1	8.26 a	7.8	C
34.0	33.3	33.0	32.9	32.9	32.4	32.4	32.3	32.85	36.9	0.23 p	29.5	7.00 a	7.4	C
32.91	32.57	32.43	32.40	32.33	32.24	32.35	32.15	32.36	35.90		28.86		7.04	

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Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
1	31.8	31.9	31.8	31.6	31.2	30.9	30.0	30.1	30.6	31.9	32.9	34.1	35.3	35.4	34.4	33.5
2	31.9	32.1	31.3	31.5	31.5	30.4	30.1	31.0	32.1	33.8	34.8	35.3	35.2	35.6	34.8	33.8
3	32.0	31.9	31.9	31.6	31.8	31.5	29.9	29.4	28.5	29.7	32.3	35.3	35.9	35.4	35.3	34.4
4	32.3	32.5	32.3	31.9	31.5	30.7	29.3	28.7	29.4	31.9	34.6	35.2	36.8	37.8	35.6	35.0
5	32.5	32.3	32.3	32.2	32.2	29.6	27.9	27.9	29.0	30.9	33.8	36.9	37.1	38.1	36.6	35.1
6	32.5	32.1	32.5	32.2	31.6	29.9	29.3	29.7	30.9	32.6	34.6	37.1	37.2	37.5	35.9	34.4
7	33.1	33.1	32.9	32.1	31.5	29.9	29.9	30.9	30.0	32.5	35.3	38.1	39.4	37.9	35.4	33.7
8	32.6	32.2	32.1	32.1	31.6	30.6	29.3	28.4	29.4	31.6	32.9	35.0	35.7	35.4	35.0	34.3
9	32.3	32.1	32.2	31.9	31.5	30.9	30.0	31.3	30.9	31.5	32.5	33.8	34.8	35.0	34.8	33.8
10	32.3	32.3	32.2	32.1	32.1	30.6	29.6	30.0	30.4	32.3	34.1	35.1	35.1	34.7	34.3	32.8
11	32.2	32.1	31.8	31.6	31.3	30.9	30.7	29.6	30.7	33.5	34.6	34.6	33.8	33.4	33.4	32.8
12	32.3	32.2	31.9	31.3	30.6	30.7	29.7	30.0	31.6	32.6	33.7	34.1	34.3	34.1	33.1	32.6
13	32.6	32.3	32.2	32.1	31.6	30.9	31.2	31.5	31.9	32.8	32.9	34.6	34.0	33.5	32.8	32.6
14	31.6	32.2	31.9	32.1	31.2	30.9	29.9	30.1	29.9	31.3	33.7	35.0	35.1	35.6	34.1	32.3
15	32.2	32.2	31.9	32.2	31.8	30.7	30.4	30.7	31.8	33.1	33.4	35.1	35.0	35.0	33.9	32.1
16	31.4	31.2	31.1	30.9	30.3	29.0	29.2	29.8	30.8	32.1	34.3	35.1	35.1	34.2	33.8	33.1
17	32.1	32.0	32.0	31.8	30.6	28.7	29.2	29.3	30.5	32.1	33.6	35.5	34.9	34.9	34.2	33.4
18	32.2	32.1	32.1	31.2	29.9	28.8	28.7	30.6	32.4	34.3	35.1	35.1	34.7	33.9	33.4	32.7
19	31.7	31.7	31.4	31.4	31.1	29.8	28.7	29.3	31.7	33.7	35.1	36.5	35.9	34.9	33.7	32.0
20	31.1	31.1	31.1	30.8	29.6	28.4	28.6	28.6	30.8	33.0	33.3	34.9	37.8	40.2	38.1	33.7
21	32.2	31.2	32.0	31.7	31.1	30.5	29.8	30.2	31.5	33.0	33.9	35.0	36.1	36.4	35.6	33.4
22	31.8	32.0	30.9	29.9	30.3	28.9	27.7	27.5	29.2	29.8	32.7	35.2	37.1	39.0	37.1	35.0
23	30.6	30.3	29.6	29.8	30.9	28.9	28.1	30.2	29.3	30.5	32.2	35.2	35.5	36.2	35.9	35.5
24	31.7	31.1	30.8	30.6	31.4	30.0	29.6	29.2	31.5	33.0	33.3	...	...	35.5	34.2	33.6
25	31.8	32.0	32.0	31.2	30.8	29.6	30.5	29.3	30.5	31.7	33.7	35.3	36.5	37.2	36.4	34.3
26	32.1	30.7	31.4	31.3	30.8	29.9	29.1	29.2	29.2	31.9	33.3	35.1	36.1	36.4	36.7	34.1
27	32.1	32.0	32.0	32.0	32.3	30.8	29.8	29.8	31.4	33.0	33.6	34.4	35.0	34.6	33.6	33.1
28	31.0	31.3	30.1	30.5	30.5	30.5	29.5	30.7	31.3	34.1	36.3	36.7	36.3	35.1	33.6	32.6
29	31.9	31.9	31.7	31.4	30.7	29.8	29.1	28.3	39.1	31.1	32.4	32.9	33.9	34.4	33.8	33.2
30	31.7	31.1	31.0	30.8	30.5	28.5	27.9	29.4	31.7	33.2	35.0	35.1	33.9	33.7	32.8	32.1
31	30.8	30.7	30.2	30.7	30.5	28.0	28.9	30.5	33.2	35.8	37.7	37.3	36.6	34.8	33.5	32.3
Mean	31.96	31.83	31.66	31.46	31.10	29.97	29.40	39.73	30.66	32.38	33.94	35.29	35.67	35.68	34.75	32.46

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1	31.9	31.4	31.6	31.2	30.7	29.1	28.5	29.1	29.9	33.2	35.7	35.2	35.6	34.6	33.6	32.3
2	31.4	31.0	30.7	30.5	29.8	28.5	28.2	29.2	29.8	31.0	33.7	36.1	35.1	33.8	32.9	31.9
3	31.4	31.4	31.0	30.5	30.4	27.9	27.4	28.6	31.5	34.4	36.7	37.1	36.9	36.0	36.0	33.6
4	31.8	30.0	31.3	31.5	29.9	29.1	29.3	31.0	32.3	34.1	35.1	36.3	37.0	36.9	34.5	33.5
5	31.9	31.8	31.6	31.6	30.0	27.9	28.7	29.7	32.5	34.3	35.7	...	...	...	...	...
6	...	...	...	...	...	...	...	...	...	...	...	35.7	36.2	36.7	35.3	32.9
7	32.3	32.6	32.0	31.7	31.6	30.3	29.1	29.2	30.5	32.4	34.4	37.7	38.6	37.3	35.2	33.6
8	32.0	32.0	31.4	32.0	31.4	30.1	29.2	29.1	29.2	30.1	30.7	32.1	34.8	35.4	34.8	34.1
9	31.4	30.7	30.1	30.5	29.9	29.2	27.7	27.4	29.7	30.1	30.5	32.9	34.1	34.5	33.6	32.9
10	32.3	32.1	31.4	31.9	31.4	32.0	30.5	30.8	32.1	34.4	33.9	33.6	34.4	35.1	34.8	33.9
11	31.4	31.4	31.4	31.4	31.3	30.5	29.9	29.9	31.4	32.9	33.2	33.6	34.9	35.1	33.6	32.7
12	32.1	31.9	31.7	31.4	30.0	29.5	29.8	29.5	30.1	29.8	31.9	33.0	34.2	34.8	34.8	33.3
13	32.0	31.7	31.5	30.8	30.8	29.3	29.3	29.3	31.2	33.6	36.5	37.4	37.5	37.2	35.0	31.8
14	32.5	32.2	32.1	31.8	31.2	30.0	30.6	31.7	33.8	35.9	36.7	34.9	35.2	35.2	34.3	33.4
15	32.0	31.5	31.5	31.4	30.8	28.6	28.6	30.6	31.8	33.7	34.5	35.2	34.5	33.4	32.2	31.5
16	32.1	32.2	32.0	32.2	31.5	29.3	30.6	30.6	31.8	34.7	36.7	36.8	35.9	35.2	33.0	32.2
17	32.1	30.6	28.6	28.3	28.1	27.4	32.7	32.1	35.9	37.8	40.2	40.0	39.9	40.0	36.4	34.2
18	32.0	31.5	30.6	30.6	29.8	28.6	28.6	27.8	29.9	32.8	34.5	36.8	36.8	35.9	35.5	34.7
19	32.3	30.7	30.9	31.3	30.7	30.0	30.7	32.3	32.2	34.4	34.6	35.8	36.3	36.0	35.3	33.5
20	32.3	32.2	32.1	31.6	32.1	30.9	30.7	29.7	30.9	34.6	37.5	36.0	36.2	35.3	34.6	33.4
21	32.2	30.9	31.6	31.2	30.9	29.9	30.0	30.0	30.7	32.1	33.8	35.3	36.2	35.8	35.7	35.0
22	31.3	30.9	31.5	31.3	31.5	31.6	30.9	30.9	31.6	33.2	34.6	35.7	36.9	36.0	25.1	31.3
23	31.5	32.3	31.3	31.2	31.3	30.9	30.9	30.1	30.7	31.9	33.8	34.6	36.0	35.9	34.3	32.9
24	32.1	31.6	31.5	32.1	31.2	30.1	29.3	39.0	30.0	31.5	33.1	36.0	37.5	36.0	34.8	33.5
25	32.4	32.2	32.0	31.7	31.7	30.7	29.4	38.0	28.8	30.8	33.3	36.1	36.9	35.7	34.4	33.0
26	22.7	33.6	32.4	32.2	32.0	31.0	30.4	30.7	31.0	31.7	34.2	33.9	35.7	35.4	34.5	33.2
27	31.3	31.3	31.0	31.0	30.8	30.1	29.5	31.0	33.2	34.7	36.3	35.8	36.3	34.9	34.7	33.9
28	31.0	31.4	31.0	31.5	31.0	30.1	29.5	29.4	30.7	33.2	36.6	36.6	35.2	33.5	33.9	35.4
29	32.4	32.0	31.4	31.3	31.4	29.8	29.5	29.4	31.0	33.2	31.4	35.4	35.8	35.1	33.6	32.3
30	31.7	31.4	31.4	31.7	31.7	31.4	30.1	28.8	30.1	32.4	35.5	36.6	36.3	35.3	33.9	33.8
31	31.8	31.8	31.5	31.4	30.9	29.5	28.6	28.9	30.8	33.3	35.5	35.4	36.2	36.2	33.3	31.5
Mean	31.92	31.60	31.33	31.28	30.89	29.84	29.64	29.80	31.12	33.03	34.76	35.58	36.10	35.57	34.42	33.29

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5p	6p	7p	8p	9p	10p	11p	M. N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
32.8	32.3	32.6	32.3	32.6	32.6	32.5	32.3	32.39	36.5	1.30 p	29.3	7.50 a	7.2	A
33.1	32.3	32.3	32.8	32.6	32.5	32.3	32.3	32.72	36.8	1.15 p	30.1	7.00 a	6.7	C
33.1	32.5	33.1	33.1	31.6	32.2	32.3	32.2	32.37	35.9	1.00 p	28.5	9.00 a	7.4	C a.m., A p.m.
32.8	32.1	31.3	31.8	32.2	32.2	32.3	32.3	32.65	37.8	2.00 p	28.7	8.00 a	9.1	C
33.8	33.1	32.3	32.3	32.3	32.5	32.5	32.6	32.74	38.1	2.00 p	27.8	7.30 a	10.3	C
32.9	32.3	31.5	32.5	32.6	32.8	32.9	33.5	32.96	37.5	2.00 p	29.3	7.00 a	8.2	A
32.3	31.3	32.1	32.8	32.3	32.3	32.3	32.3	33.06	39.7	0.40 p	29.4	6.30 a	10.3	A
33.5	32.2	31.8	32.3	32.1	32.3	32.5	32.2	32.38	36.0	0.40 p	28.2	7.40 a	7.8	C
32.9	32.2	31.6	32.3	32.3	32.3	32.5	32.3	32.40	35.3	1.45 p	30.0	7.00 a	5.3	C
32.1	32.1	32.3	32.5	32.6	32.5	32.3	32.3	32.45	35.4	0.30 p	29.3	7.40 a	6.1	C
32.2	32.2	32.3	32.5	32.2	32.9	32.8	32.8	32.37	34.6	11a-N	29.6	8.00 a	5.0	C
32.5	32.1	32.1	32.6	32.9	33.4	32.9	32.9	32.33	34.3	1.00 p	29.4	6.50 a	4.9	C
32.1	32.1	32.8	32.3	33.5	33.1	32.6	32.5	32.52	34.6	Noon	30.9	6.00 a	3.7	C
32.1	32.3	32.8	32.3	32.9	33.1	33.1	32.6	32.42	35.6	2.00 p	29.4	9.10 a	6.2	C
31.6	31.6	32.2	32.8	32.8	32.3	32.8	31.8	32.47	35.3	0.15 p	30.4	7.00 a	4.9	C
32.7	32.9	32.9	32.4	32.1	32.1	32.1	32.2	32.12	35.2	0.30 p	29.0	6.00 a	6.2	C
32.2	32.4	33.0	32.5	32.2	32.0	32.1	32.2	32.22	35.5	Noon	28.3	6.50 a	7.2	C
32.1	32.1	32.0	32.1	32.1	32.2	32.2	32.0	32.25	35.3	11.50 a	28.1	6.20 a	7.2	C
30.6	30.9	31.4	32.0	32.1	32.0	31.8	31.5	32.12	36.5	Noon	28.7	7.00 a	7.8	C
33.0	33.0	33.7	33.4	33.0	32.7	32.2	32.2	32.68	40.8	2.20 p	27.8	6.10 a	13.0	A
32.1	32.7	32.7	32.5	32.5	32.8	32.5	32.0	32.64	36.4	2.00 p	29.2	6.50 a	7.2	C
33.7	31.4	32.2	32.2	31.8	31.1	31.8	31.2	32.06	39.0	2.00 p	27.4	7.55 a	11.6	A
34.9	33.6	32.8	30.6	33.0	32.0	32.2	31.7	32.05	36.4	2.35 p	28.1	7.00 a	8.3	A
34.5	32.5	31.8	32.5	32.2	32.4	32.2	32.2	...	35.5	2.00 p	28.6	7.40 a	6.9	A
32.8	33.0	32.5	32.5	33.0	32.8	30.8	32.1	32.60	37.4	2.05 p	29.2	6.05 a	8.2	A
32.9	31.9	32.1	32.7	32.6	32.0	32.4	32.4	32.35	37.3	2.55 p	28.8	6.30 a	8.5	A
32.4	32.0	32.6	32.6	32.1	32.6	32.1	31.1	32.37	35.0	1.00 p	29.7	7.10 a	5.3	A
31.3	31.2	31.9	31.3	31.0	32.0	32.1	32.0	32.20	37.4	11.50 a	29.5	7.00 a	7.9	A
31.7	31.6	32.0	32.1	32.1	32.4	32.1	31.8	31.72	34.4	2.00 p	28.3	8.00 a	6.1	C
31.7	32.0	32.0	32.1	32.6	32.4	31.9	31.9	31.87	35.1	Noon	27.7	6.45 a	7.4	C
31.7	32.1	32.3	32.3	32.1	32.5	32.1	31.9	32.44	37.9	11.50 a	28.0	6.00 a	9.9	A a.m., C p.m.
32.52	32.18	32.31	32.35	32.39	32.41	32.30	32.17	32.40	36.43		28.94		7.49	

AUGUST, 1898.

5p	6p	7p	8p	9p	10p	11p	M. N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
32.0	31.4	31.2	31.7	31.7	31.7	31.9	32.0	31.97	35.8	1.25 p	28.3	7.15 a	7.5	C
31.2	32.1	32.0	32.4	31.1	32.1	32.1	32.0	31.61	36.1	Noon	28.2	7.00 a	7.9	C a.m., A p.m.
32.7	32.7	32.1	31.4	31.4	31.7	31.3	31.9	32.33	37.3	11.50 a	27.4	7.00 a	9.9	A
32.3	32.0	31.9	32.0	32.6	32.6	31.9	32.0	32.54	37.0	1.00 p	28.5	6.28 a	8.5	A
...	...	...	...	...	...	...	...	...	...	...	...	...	...	A
31.1	31.2	32.3	32.3	31.9	32.0	32.3	32.0	...	...	...	...	...	...	A
32.1	32.5	32.5	32.7	32.7	32.1	32.0	32.1	32.80	38.6	1.00 p	28.5	7.40 a	10.1	A a.m., C p.m.
32.0	31.4	30.7	31.1	32.1	32.0	32.3	32.0	31.75	35.7	2.10 p	29.1	8.00 a	6.6	C
31.9	32.0	31.4	32.1	32.1	32.1	32.1	32.9	31.32	34.5	2.00 p	27.4	8.00 a	7.1	C
32.7	31.9	32.1	32.4	32.6	32.6	32.1	32.3	32.64	35.1	2.00 p	30.5	7.00 a	4.6	C
32.0	31.9	32.0	32.4	32.0	32.6	32.3	32.1	32.16	35.1	2.00 p	29.9	7–8 a	5.2	C
32.1	32.3	32.1	32.3	32.6	32.4	32.6	32.3	31.94	35.2	2.25 p	29.5	6a, 8a	5.7	C
31.1	31.4	31.5	32.5	33.1	32.8	33.0	32.7	32.62	37.5	1.00 p	29.3	6–8 a	8.2	C
32.2	31.8	32.7	32.5	32.4	32.1	32.5	32.0	32.90	36.7	11.00 a	30.0	6.00 a	6.7	C
30.8	32.2	32.4	32.7	32.2	32.7	32.4	32.2	32.03	35.2	Noon	28.6	6.30 a	6.6	C
32.0	32.0	33.0	32.1	33.0	32.1	32.2	33.6	32.78	37.7	11.40 a	29.3	6.00 a	8.4	C a.m., A p.m.
32.5	32.5	31.8	30.8	33.0	33.3	33.0	32.7	33.50	40.5	11.45 a	27.1	6.50 a	13.4	A
32.8	33.1	33.7	31.7	33.0	33.3	33.0	32.2	32.47	37.4	0.40 p	27.8	8.00 a	9.6	A
32.3	32.2	32.3	32.3	32.3	32.2	33.1	32.8	32.77	36.3	1.00 p	30.0	6.00 a	6.3	C
32.6	30.1	32.2	32.1	31.8	32.3	32.2	31.8	32.72	37.5	11.00 a	29.4	5.40 p	8.1	A
33.0	31.3	32.8	33.1	32.6	32.3	32.2	32.1	32.53	36.8	1.30 p	29.9	6.00 a	7.4	A
32.9	32.3	32.9	31.6	32.1	31.8	31.8	30.9	32.65	37.5	1.20 p	30.7	7.30 a	6.8	A
32.3	31.6	31.6	31.6	32.5	32.3	32.2	32.1	32.32	36.3	1.30 p	30.1	8.00 a	6.2	A
32.1	31.8	31.8	32.3	31.8	32.2	32.2	32.3	32.32	37.5	1.00 p	29.0	8.00 a	8.5	C
32.9	33.0	32.9	33.0	33.2	33.0	32.4	32.4	32.50	36.9	1.00 p	28.0	8.00 a	8.9	C
32.3	31.4	32.0	31.7	31.7	32.0	31.9	31.4	32.46	35.7	1.00 p	30.4	7.00 a	5.3	C
33.5	33.0	33.2	33.3	32.4	32.4	32.3	31.0	32.79	36.9	11.39 a	29.5	7.00 a	7.4	A
33.3	32.9	33.0	33.3	31.1	33.0	32.7	32.3	32.57	36.9	11.28 a	29.4	8.00 a	7.5	A
31.7	31.4	31.4	32.2	29.5	32.0	32.4	32.3	32.12	36.1	0.50 p	28.6	7.24 a	7.5	A
32.3	32.3	32.3	32.3	31.7	32.3	31.7	32.0	32.46	36.6	Noon	28.8	8.00 a	7.8	C
31.4	31.8	31.8	31.8	31.9	31.8	31.8	31.4	32.10	36.2	1–2 p	28.6	7.00 a	7.6	C
32.24	32.01	32.18	32.19	32.14	32.34	32.26	32.13	32.40	36.64		29.03		7.61	

DECLINATION: 4°+ . ′ . W

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
1	31.8	31.4	30.3	30.9	31.1	29.9	29.3	29.9	31.4	32.8	34.3	35.5	35.6	35.2	34.3	33.3
2	31.7	31.8	31.5	31.4	31.1	30.1	29.3	31.1	33.9	35.5	36.8	36.2	35.4	35.6	34.4	33.1
3	32.1	30.3	30.9	31.5	29.6	28.9	28.0	30.3	33.3	34.8	38.3	37.7	39.9	37.5	36.4	35.4
4	33.0	33.0	32.1	32.0	32.0	31.1	30.8	32.1	33.3	35.6	37.3	38.4	37.0	36.5	34.0	33.1
5	32.4	32.4	31.8	31.5	31.1	29.9	29.2	29.0	31.2	33.1	35.2	35.8	35.3	35.2	33.9	32.3
6	32.6	32.5	32.5	32.4	32.5	31.9	31.0	30.7	31.8	33.5	35.1	35.6	34.9	34.3	33.1	32.4
7	32.2	32.4	32.1	32.4	31.6	30.7	30.9	31.0	32.8	34.4	35.5	35.3	34.9	33.5	33.2	32.6
8	31.9	31.5	31.3	31.2	30.7	29.6	27.8	27.2	27.5	29.6	32.1	34.3	35.1	35.3	34.0	32.6
9	31.5	31.6	30.9	30.3	30.3	31.9	28.8	28.7	29.0	31.2	33.7	35.1	35.4	34.9	33.2	32.6
10	28.7	25.9	27.1	25.3	29.4	36.8	37.1	36.9	39.0	39.6	40.1	39.4	38.7	35.9	35.3	34.3
11	34.6	33 4	33.8	36.6	35.3	33.2	33.2	32.4	32.8	35.1	37.6	38.5	37.5	37.4	35.3	34.6
12	33.5	33.8	33.8	33.5	34.4	32.4	31.9	31.3	32.6	33.5	37.2	37.5	36.2	35.3	33.8	32.6
13	33.1	32.9	33.2	32.6	32.4	31.6	31.6	32.2	33.8	35.6	36.8	36.6	36.0	34.7	33.1	32.5
14	32.9	32.5	32.1	32.4	31.6	30.4	30.4	32.5	32.5	34.9	36.6	37.4	36.2	34.9	33.1	31.8
15	32.8	31.9	30.6	29.7	29.3	29.7	29.9	31.9	34.1	37.1	38.5	38.7	37.5	35.3	34.1	33.3
16	32.6	32.5	32.4	31.8	32.1	31.6	31.8	32.5	35.6	38.1	37.9	36.9	35.3	33.7	32.4	32 5
17	32.5	31.9	31.5	31.5	31.9	30.4	29.6	29.6	30.9	34.7	37.8	...	...	...	33.2	32.2
18	32.5	31.8	31.4	31.6	31.9	31.0	30.4	31.3	33.3	36.2	36.9	37.2	36.5	34.9	33.8	32.2
19	32.6	32.5	32.2	32.1	32.2	31.2	30.3	31.2	32.5	34.5	36.5	36.3	35.6	35.1	34.0	32.6
20	32.6	32.5	32.0	32.5	32.2	31.6	30.4	29.6	29.7	32.4	34.9	36.2	37.1	35.4	34.1	33.4
21	32.8	32.5	32.5	32.0	32.1	30.9	30.3	30.2	31.2	32.5	36.0	36.2	36.3	35.4	33.5	33.4
22	32.5	32.2	31.9	32.0	31.9	31.6	30.4	30.9	32.5	32.6	33.5	34.4	34.6	34.7	33.5	32.8
23	31.9	31.8	31.8	31.8	31.8	31.9	31.3	31.9	33.2	34.4	34.9	35.4	36.0	35.1	33.4	33.2
24	32.5	31.9	32.5	32.9	32.5	32.1	31.2	32.1	33.7	35.4	36.8	36.1	35.7	34.0	32.4	32.5
25	32.0	32.7	34.0	31.6	31.4	31.9	30.8	31.4	32.7	34.8	36.9	36.4	35.4	34.8	32.7	33.3
26	32.5	32.6	33.2	31.4	31.6	31.3	31.0	31.1	31.9	33.2	34.5	36.0	35.2	34.7	34.8	33.3
27	32.5	32.3	32.2	32.3	32.0	32.0	31.6	31.1	32.3	32.6	33.2	34.1	34.1	33.9	32.8	32.7
28	31.2	31.4	31.7	31.9	29.8	31.9	31.9	31.9	32.3	34.1	35.5	36.4	37.3	34.2	34.2	34.2
29	32.0	31.4	32.0	31.1	30.1	30.7	31.4	33.5	35.2	37.6	38.6	37.9	37.0	36.1	35.0	33.5
30	31.7	32.1	32.7	32.7	32.7	31.9	31.7	32.3	32.9	35.5	37.9	35.5	36.3	35.2	33.9	33.2
Mean	32.30	31.98	31.95	31.77	31.61	31.37	30.82	31.31	32.69	34 49	36.18	36.45	36.13	35.13	33.85	33.08

DECLINATION: 4°+ . ′ . W

1	32.7	32.0	32.7	32.3	32.1	32.0	32.0	32.6	34.4	36.2	36.5	36.0	35.7	35.2	34.1	33.3
2	32.6	32.3	32.2	32.2	31.9	31.4	32.0	31.1	32.9	34.4	35.7	35.2	34.7	34.1	33.2	32.9
3	32.6	32.7	32.6	33.0	31.9	32.0	31.2	31.5	32.8	34.7	35.8	35.7	34.1	33.2	32.1	32.6
4	32.7	32.5	32.5	32.7	31.9	31.7	29.8	29.5	30.8	32.9	34.5	35.0	35.0	35.0	34.1	33.8
5	32.5	32.2	32.2	31.9	31.5	32.1	31.0	29.7	30.5	32.0	35.0	36.9	36.1	34.9	33.6	32.7
6	32.5	32.3	31 9	31.9	32.0	31.4	31.4	36.7	30.4	31.4	33.3	34.7	35.0	34.7	34.5	33.9
7	32.2	32.3	32.0	31.9	32.0	32.0	30.3	30.3	30.4	31.7	33.9	35.8	34.5	34.7	33.6	32.8
8	31.2	31.7	32.0	31.7	31.9	32.5	32.6	32.1	31.2	32.5	33.9	34.5	35.2	34.4	33.8	33.3
9	32.5	32.5	32.0	31.5	31.7	31.7	31.1	31.1	33.0	32.8	34.2	34.8	34.4	33.6	32.7	32.7
10	32.0	32.0	32.0	32.0	32.0	31.9	31.0	31.1	32.0	33.3	34.7	35.0	34.5	33.5	32.0	31.7
11	32.3	31.2	31.4	31.6	31.1	31.0	30.5	31.2	33.5	34.8	36.0	36.0	35.0	34.1	32.7	32.5
12	32.5	32.3	32.0	31.7	31.7	31.7	31.2	31.1	31.5	33.6	34.8	35.0	34.8	34.1	32.8	32.0
13	32.0	32.1	32.0	32.0	32.2	32.0	31.2	30.8	31.6	34.2	35.1	36.5	35.5	33.9	32.5	31.7
14	32.2	32.5	32.2	31.7	31.5	31.9	31.9	32.0	33.2	34.2	35.8	35.7	34.8	33.6	31.7	32.0
15	32.0	32.2	32.0	31.7	31.9	32.7	32.0	32.9	33.0	33.5	35.5	35.8	35.0	33.8	32.6	32.5
16	32.0	31.9	31.9	31.7	31.3	32.2	31.9	32.3	32.1	33.2	34.5	35.8	35.0	33.3	32.3	32.0
17	32.2	32.0	32.5	31.9	32.1	32.0	31.7	32.0	33.0	34.8	35.8	36.0	35.4	33.8	32.6	32.6
18	32.6	32.5	32.1	31.9	32.5	32.3	31.0	30.5	30.5	32.1	34.1	35.0	34.4	33.6	32.6	32.3
19	32.5	32.3	32.0	31.9	31.9	31.9	31.1	30.5	30.4	31.9	33.5	35.5	35.5	34.5	33.3	32.5
20	31.9	32.1	31.9	31.8	32.5	32.9	31.5	30.4	30.3	32.0	34.3	34.9	34.4	33.5	32.6	32.1
21	32.5	32.4	31.9	31.9	31.9	31.5	31.8	31.6	34.0	34.1	35.6	36.3	36.2	34.9	33.4	32.9
22	33.4	32.6	31.9	31.9	31.9	32.5	32.5	32.0	31.9	33.4	33.4	33.4	33.2	33.2	33.1	33.2
23	31.9	32.0	32.9	34.1	33.5	33.5	31.9	32.6	32.8	33.1	34.4	34.3	33.8	33.7	32.6	32.5
24	32.5	32.5	32.5	32.5	32.5	32.5	31.6	31.2	31.2	31.8	32.9	34.4	34.2	33.4	33.2	32.8
25	31.9	32.5	32.0	31.9	32.0	32.2	31.2	31.0	31.2	32.1	34.1	34.9	34.7	33.5	32.7	32.4
26	32.5	32.4	31.0	32.6	34.2	31.6	31 9	32.1	34.0	35.3	35.6	35.4	33.2	33.4	32.7	31.9
27	33.1	33.2	32.5	32.7	32.7	32.9	32.4	32.2	32.7	33.1	34.4	34.2	34.0	33.4	32.7	32.6
28	32.2	31.9	31.4	31.8	31.9	32.1	32.4	31.3	32.2	32.4	32.7	34.4	34.7	34.7	33.4	32.7
29	31.8	31.2	32.1	30.4	30.7	31.8	30.6	32.6	34.9	35.5	36.0	35.6	35.5	34.9	34.1	32.5
30	32.9	31.7	28.7	31.1	30.9	33.8	34.6	35.5	37.1	36.2	35.6	35.5	34.9	33.7	33.1	33.1
31	31.7	32.9	32.7	33.6	31.4	33.1	33.7	34.6	35.0	34.8	35.0	35.6	35.2	34.6	33.3	33.3
Mean	32.33	32.22	32.09	32.05	31.97	32.15	31.65	31.81	32.40	33.49	34.76	35.28	34.79	34.03	33.02	32.64

SEPTEMBER, 1898.

5p	6p	7p	8p	9p	10p	11p	M.N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
33.1	32.0	33.1	32.7	32.5	33.3	32.5	32.0	32.42	36.8	0.30 p	29.3	7.00 a	7.5	A
31.8	32.3	32.8	31.8	32.5	32.5	32.5	32.1	32.80	36.8	11.00 a	29.3	7.00 a	7.5	A
33.6	33.3	28.6	32.3	31.1	32.5	32.8	32.4	32.98	39.9	1.00 p	26.7	7.30 a	13.2	S'
32.1	33.3	33.6	33.3	32.8	32.1	32.5	32.7	33.49	38.4	Noon	30.5	6.50 a	7.9	A
32.3	32.4	31.2	32.2	32.5	32.5	32.4	32.4	32.38	35.8	Noon	29.0	8.00 a	6.8	C a.m., A p.m.
32.2	32.4	32.9	32.9	32.6	32.8	33.2	32.2	32.83	35.6	Noon	30.7	8.00 a	4.9	C
32.4	32.6	32.9	32.6	32.2	32.4	31.8	31.8	32.67	35.5	11.00 a	30.7	6.00 a	4.8	C
31.9	32.4	33.5	32.5	33.2	33.1	32.5	31.6	31.72	35.4	1.29 p	26.9	8.30 a	8.5	C
31.9	32.5	32.5	32.5	31.8	32.9	33.8	33.5	32.10	35.4	1.00 p	28.2	7.45 a	7.2	A
34.3	32.1	34.6	33.8	31.9	31.2	35.4	33.2	34.00	**40.1**	11.00 a	**21.6**	5.40 a	18.5	S''
33.2	33.3	33.7	33.7	33.8	34.0	34.0	33.7	34.61	38.8	11.52 a	32.4	8.00 a	6.4	A
32.8	33.5	33.2	33.2	33.3	33.7	31.9	33.2	33.67	37.5	Noon	31.3	8.00 a	6.2	C
32.5	32.6	33.3	31.0	33.5	33.2	33.2	33.5	33.40	36.8	11.00 a	31.6	6a, 7a	5.2	A
32.2	32.6	32.5	33.3	33.5	33.1	33.1	32.4	33.12	37.4	Noon	30.4	6a, 7a	7.0	C
33.1	33.2	33.6	33.3	33.4	33.5	33.2	32.8	33.35	38.7	Noon	28.7	3.39 a	10.0	A
33.1	33.2	32.6	33.3	33.3	33.2	32.9	32.6	33.50	38.2	10.46 a	31.6	6.00 a	6.6	C
32.1	33.1	33.2	33.4	33.1	33.2	32.8	32.6	...	37.8	11.00 a	29.6	7a, 8a	8.2	C
32.4	32.8	33.7	32.4	33.1	33.3	33.2	32.8	33.19	37.2	Noon	30.4	7.00 a	6.8	C
32.5	32.5	32.8	33.1	32.6	32.4	32.5	32.4	33.01	36.5	11.00 a	30.3	7.00 a	6.2	C
32.2	32.6	33.1	32.2	32.8	33.1	32.9	33.2	32.86	37.1	1.00 p	29.0	8.20 a	8.1	C
32.9	32.9	32.8	32.9	33.2	32.8	32.6	32.5	32.93	37.1	0.40 p	29.7	7.50 a	7.4	C
32.5	32.5	32.6	32.8	33.1	32.6	32.5	32.2	32.62	34.7	2.00 p	30.4	7.00 a	4.3	C
34.1	34.1	33.3	32.8	32.1	31.5	32.6	32.5	33.03	36.1	1.20 p	31.2	7.30 a	4.9	A
33.1	33.1	32.8	32.6	32.4	31.6	31.8	32.6	33.10	37.2	11.35 a	30.7	9.54 p	6.3	A
33.5	32.0	32.6	33.2	32.6	33.5	33.2	32.6	33.17	36.9	11.00 a	30.5	6.45 a	6.4	A
33.2	33.3	32.9	32.8	32.8	32.7	32.7	32.6	32.97	36.0	Noon	31.0	7.00 a	5.0	A a.m., C p.m.
33.3	32.7	33.2	33.3	33.2	32.7	32.8	32.0	32.70	34.1	N.-1p	31.1	8.00 a	3.0	C
34.2	32.9	34.1	33.6	33.6	34.1	33.2	31.6	33.22	37.3	1.00 p	29.8	5.00 a	7.5	A
34.1	30.5	35.5	33.9	34.5	32.6	33.3	34.2	33.82	39.8	11.10 a	27.2	5.40 p	12.6	S'
33.0	32.6	33.6	33.5	32.7	33.3	33.2	32.6	33.45	37.9	11.00 a	31.4	6.30 a	6.5	A
32.88	32.70	32.99	32.88	32.85	32.83	32.90	32.62	33.07	37.07		29.72		7.35	

OCTOBER, 1898.

5p	6p	7p	8p	9p	10p	11p	M.N.	Mean	Maximum		Minimum		Range	Remarks
										h m		m		
33.0	32.0	33.0	32.9	33.0	33.6	32.6	32.5	33.43	36.6	11.30 a	30.4	6.10 p	6.2	A
33.0	32.8	33.2	33.3	33.2	33.2	32.7	32.7	33.04	35.7	11.00 a	31.1	8.00 a	4.6	C
32.9	33.3	33.6	33.5	33.5	33.2	32.9	32.7	33.09	35.8	11.00 a	31.2	7.00 a	4.6	C
33.3	33.3	33.2	33.3	33.3	33.2	32.7	32.6	32.89	35.0	N.-2p	29.5	8.00 a	5.5	C
33.2	33.3	33.3	33.2	32.8	32.7	32.7	32.3	32.85	37.0	0.20 p	29.5	8.10 a	7.5	C
33.2	32.0	33.2	33.0	32.7	32.8	32.3	32.3	32.90	35.0	1.00 p	30.1	8.55 a	4.9	C
32.8	32.8	33.3	33.9	33.5	33.3	32.6	32.5	32.71	35.8	Noon	29.8	7.50 a	6.0	C
33.3	33.0	33.0	33.2	33.0	32.7	32.7	32.6	32.83	35.4	1.15 p	31.2	1a, 9a	4.2	C
33.3	33.2	33.3	33.3	32.7	32.1	32.5	32.5	32.72	34.8	Noon	31.1	7a, 8a	3.7	C
32.7	32.8	32.7	33.2	33.5	33.2	33.3	32.5	32.69	35.0	Noon	30.8	7.30 a	4.2	C
32.5	32.5	32.5	32.5	32.6	32.5	32.5	32.3	32.70	36.0	11.30 a	30.4	6.30 a	5.6	C
32.7	32.7	32.7	32.7	32.6	32.7	32.5	32.1	32.65	35.0	Noon	31.1	8.00 a	3.9	C
32.0	32.6	32.5	32.6	32.6	32.6	32.3	32.6	32.75	36.5	Noon	30.5	7.50 a	6.0	C
32.6	32.6	32.7	32.7	32.8	32.8	32.6	32.6	32.85	35.8	11.00 a	31.5	5.00 a	4.3	C
32.6	32.5	32.7	32.8	32.7	32.5	32.3	32.0	32.88	36.0	11.55 a	31.3	4.25 a	4.7	A
32.5	32.6	32.8	33.3	33.2	33.0	32.7	32.7	32.76	36.3	11.58 a	30.7	5.26 a	5.6	A
32.7	32.7	32.7	32.6	32.7	32.7	32.7	32.8	33.00	36.3	11.58 a	31.7	7.00 a	4.6	C
32.6	32.7	32.7	32.8	33.0	32.7	32.7	32.6	32.57	35.5	11.59 a	30.3	8.15 a	5.2	C
32.6	32.7	32.6	32.7	32.7	32.8	32.7	32.5	32.60	35.6	0.24 p	30.4	9.00 a	5.2	C
33.4	33.2	33.8	33.5	33.8	33.2	32.8	32.7	32.73	34.9	Noon	30.1	8.30 a	4.8	A
33.4	32.6	32.2	32.9	31.0	32.5	33.2	32.7	33.06	36.3	Noon	30.4	8.50 p	5.9	A
32.5	29.3	33.1	33.2	30.4	32.8	31.6	34.1	32.52	33.7	10.25 a	29.0	5.34 p	4.7	A a.m., S' p.m.
32.4	32.6	32.5	32.6	32.6	32.6	32.5	32.5	32.91	34.6	11.35 a	31.6	1.15 a	3.0	A a.m., C p.m.
32.4	32.8	31.9	31.9	32.5	31.9	32.7	32.2	32.50	34.4	Noon	31.2	8a, 9a	3.2	C
32.9	33.1	32.6	32.7	32.6	31.9	32.6	32.5	32.55	34.9	Noon	31.0	8.00 a	3.9	C a.m., A p.m.
31.9	31.3	31.3	31.0	32.4	33.1	32.9	32.9	32.77	35.9	11.24 a	29.6	7.48 p	6.3	A
33.3	32.0	33.2	32.9	33.2	32.6	32.7	32.6	32.98	34.4	11.00 a	31.8	7.30 a	2.6	A
32.6	32.5	32.6	32.6	32.6	32.6	31.8	32.4	32.70	34.7	1p, 2p	29.9	10.30 p	4.8	A
32.3	32.4	30.9	31.8	31.8	31.6	30.5	32.3	32.66	**37.5**	8.20 a	29.3	6.26 p	8.2	S'
33.0	33.1	33.0	33.1	33.4	33.1	32.5	32.5	33.42	37.1	9.00 a	**27.4**	2.35 a	9.7	S' a.m., A p.m.
33.4	33.3	34.3	34.6	33.0	33.1	33.0	32.5	33.65	35.6	Noon	30.8	3.13 a	4.8	S' a.m., C p.m.
32.81	32.59	32.81	32.91	32.75	32.75	32.54	32.16	32.85	35.58		30.47		5.11	

DECLINATION: 4°+ . .′ . W

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
1	32.4	32.3	32.3	32.1	32.4	32.5	31.7	31.7	32.3	32.7	34.0	34.6	34.5	33.4	32.4	32.0
2	31.8	31.5	32.1	32.1	32.0	32.3	31.7	31.5	32.3	33.3	34.3	34.8	34.9	33.7	32.3	32.1
3	32.1	31.8	31.8	31.5	31.2	31.8	30.9	30.9	31.7	32.0	33.0	34.2	33.6	33.9	33.9	33.9
4	32.3	32.1	32.1	32.1	32.0	32.4	32.5	32.3	32.0	34.2	36.1	35.9	34.5	33.9	33.3	33.3
5	32.4	32.3	32.1	31.8	31.8	31.7	31.4	30.8	31.1	32.0	33.4	34.5	31.2	33.6	33.0	32.4
6	32.5	32.5	32.3	32.1	32.3	32.3	32.4	31.8	31.8	32.8	33.7	34.6	34.8	34.3	33.0	32.4
7	32.4	32.4	32.3	32.3	32.1	32.1	31.7	30.3	31.4	33.3	34.2	34.9	34.8	33.7	32.8	32.3
8	32.0	30.7	30.8	31.3	31.7	32.0	32.2	32.3	32.7	33.3	33.9	34.2	33.6	32.9	31.7	32.4
9	31.7	31.9	32.4	32.4	32.2	32.2	32.3	31.7	31.9	32.0	32.7	33.9	33.6	32.4	32.2	32.0
10	31.3	31.5	31.9	32.2	32.3	32.3	32.4	32.2	32.0	31.7	32.2	33.3	33.3	33.0	32.4	32.3
11	32.4	32.4	32.3	32.3	32.4	32.6	32.3	31.6	31.6	32.4	32.9	33.6	33.6	32.9	32.7	32.3
12	32.2	32.2	32.3	32.3	32.3	32.3	31.9	31.4	31.0	31.3	32.4	33.2	33.8	33.0	32.9	32.5
13	32.2	31.9	32.0	32.2	32.3	32.3	33.3	32.4	32.7	32.9	33.3	33.9	33.9	33.5	32.9	32.5
14	32.0	32.0	32.2	32.2	32.3	32.3	32.2	31.4	31.3	32.3	32.4	33.6	33.5	32.9	32.5	32.5
15	32.3	32.3	32.4	32.3	32.3	32.4	32.2	31.4	31.0	32.0	33.3	34.1	33.6	33.2	32.0	32.0
16	32.2	32.3	32.4	32.2	32.2	32.3	32.3	32.4	31.9	31.9	32.7	34.1	33.8	33.3	32.2	31.7
17	32.2	32.0	32.3	32.3	32.3	32.9	33.0	33.2	33.0	33.0	33.8	33.9	33.5	33.3	33.2	32.9
18	32.4	32.7	32.0	32.3	33.8	32.3	32.0	31.9	32.3	33.5	34.2	34.2	34.1	33.8	32.4	31.7
19	33.2	33.1	32.3	32.7	33.0	32.9	32.3	31.6	32.2	32.7	33.0	33.5	...	...	...	...
20	32.6	32.6	33.3	32.4	32.3	31.4	30.8	31.7	...	...	...	...	...	...	...	...
21	...	...	...	...	...	...	...	...	...	...	...	33.9	...	33.6	32.4	31.3
22	30.5	32.0	33.2	33.5	33.3	34.9	35.1	33.8	33.6	33.8	35.2	35.5	34.1	33.0	32.4	31.4
23	32.6	30.2	32.2	33.5	34.1	33.6	33.5	33.6	33.3	33.3	34.1	34.5	34.4	33.8	33.2	32.2
24	32.9	33.1	33.3	33.1	32.7	32.7	32.4	31.7	31.7	32.4	33.3	34.2	34.4	33.9	33.0	32.3
25	32.5	33.1	32.8	32.6	33.1	33.5	33.2	33.5	32.5	33.7	33.2	33.5	33.5	33.5	33.2	32.2
26	32.2	32.1	32.2	32.5	32.5	32.5	32.5	31.9	31.6	32.1	33.1	33.9	33.9	33.7	33.5	33.0
27	32.1	32.6	32.2	32.2	32.1	32.8	32.5	31.8	31.3	31.8	32.9	33.7	33.7	33.7	32.9	32.2
28	30.7	30.6	30.6	31.6	32.1	32.3	32.8	31.9	31.5	32.1	32.9	34.1	33.9	33.1	33.5	32.3
29	32.1	32.1	32.2	32.2	32.6	32.8	32.5	32.1	31.3	31.8	32.7	33.9	33.5	33.0	32.6	33.2
30	31.8	32.1	32.2	32.1	32.2	32.3	32.8	31.9	30.7	31.6	32.8	33.7	34.0	33.4	32.8	33.4
Mean	32.08	32.03	32.18	32.27	32.39	32.53	32.43	31.98	31.91	32.56	33.43	34.17	33.96	33.40	32.77	32.42

DECLINATION: 4°+ . .′ . W

1	31.9	31.5	31.9	31.9	32.1	32.1	32.1	31.0	30.4	31.6	32.9	34.6	34.7	34.1	32.9	32.2
2	32.3	32.2	32.1	32.2	32.8	32.3	32.8	32.2	31.5	31.9	32.6	34.3	34.0	34.1	32.3	32.1
3	32.1	32.2	32.3	32.5	32.6	33.2	33.4	32.3	31.8	32.2	32.6	34.0	33.8	35.0	34.3	32.1
4	32.1	31.0	30.7	31.8	31.5	31.9	33.2	34.4	31.8	31.8	32.3	32.8	32.9	33.1	32.9	32.3
5	31.9	32.1	32.1	31.9	31.9	32.2	32.6	31.8	30.9	31.0	32.3	32.3	33.7	32.9	32.2	31.6
6	32.1	31.6	31.2	31.5	32.1	31.5	32.1	31.2	31.0	31.9	32.8	33.1	32.9	32.6	32.2	31.8
7	32.2	31.5	31.8	31.6	31.5	32.2	31.5	31.0	31.2	32.2	32.8	33.2	33.7	32.8	32.3	31.6
8	33.4	31.5	32.1	32.0	31.4	32.0	31.2	30.8	30.8	31.8	33.9	34.6	34.5	33.1	32.4	32.2
9	32.1	32.0	32.0	31.8	32.1	32.1	32.0	31.1	31.2	31.5	31.1	34.0	33.9	33.0	32.5	31.8
10	32.2	32.1	32.1	32.2	32.1	32.4	32.7	31.7	31.7	32.2	33.4	33.7	33.6	33.5	32.1	32.0
11	32.3	32.1	32.0	32.1	32.4	32.5	31.8	31.2	31.4	31.7	33.1	34.2	34.2	33.7	32.5	32.2
12	32.3	31.8	32.0	32.2	32.1	32.0	31.5	30.6	30.3	31.1	32.1	33.6	33.6	32.8	33.4	31.7
13	32.0	32.1	31.8	32.1	32.2	32.2	32.1	31.1	31.4	32.2	33.0	33.9	33.7	33.4	32.2	32.0
14	32.0	31.8	31.7	32.0	31.7	31.8	32.2	31.8	32.1	31.8	33.2	34.0	33.7	32.4	32.8	33.7
15	32.4	32.7	34.2	33.0	32.7	32.8	32.5	32.0	32.0	31.8	33.0	33.4	33.1	32.8	32.1	31.5
16	32.1	32.3	34.2	32.9	31.6	33.6	32.7	32.3	32.9	32.9	33.2	33.6	33.3	32.7	32.0	31.4
17	32.9	32.7	32.6	32.9	32.6	33.0	33.2	34.9	32.9	33.2	34.4	34.9	34.4	33.6	32.6	32.0
18	32.7	32.4	32.7	32.1	32.0	32.1	31.9	31.9	31.7	32.3	33.8	34.6	34.2	33.0	31.9	32.0
19	32.1	32.0	32.3	32.4	32.1	31.9	31.9	31.7	33.3	32.4	33.6	34.1	34.6	33.6	32.3	31.3
20	32.7	32.0	33.2	31.6	32.6	32.1	34.6	34.5	33.6	34.2	33.9	34.4	34.4	33.9	32.7	30.7
21	32.7	32.9	32.4	32.1	32.1	32.0	31.1	29.8	31.3	32.1	33.5	34.4	34.4	33.8	32.4	31.6
22	32.6	32.7	32.4	32.7	32.4	33.5	32.9	31.6	32.0	31.9	32.7	33.3	33.8	33.2	32.7	32.0
23	32.3	32.4	32.7	32.1	32.4	32.7	32.7	31.4	30.1	31.0	32.3	33.6	34.5	34.4	33.3	32.0
24	32.3	32.4	32.6	32.4	32.3	32.7	32.7	31.3	30.1	30.4	31.6	32.6	32.9	33.2	33.0	31.8
25	32.3	32.2	32.4	32.5	32.7	32.4	32.4	30.8	29.5	29.1	29.4	33.0	33.9	33.5	32.7	32.0
26	32.2	32.4	32.6	32.7	32.6	32.4	32.3	31.0	30.5	30.1	30.8	31.8	31.9	32.0	31.9	32.0
27	32.0	32.0	32.1	32.1	32.6	32.0	32.0	30.9	29.8	30.3	31.0	32.7	32.9	32.0	31.9	31.9
28	31.9	31.9	32.0	32.0	31.6	32.4	32.9	32.2	31.8	31.8	33.0	33.0	33.5	32.9	32.7	32.7
29	32.0	32.0	32.0	32.2	32.4	32.4	32.7	31.9	31.6	32.3	34.6	35.1	33.3	32.1	31.4	32.0
30	32.0	31.9	31.4	31.9	32.2	32.6	32.6	32.4	31.2	31.2	32.6	33.3	33.2	33.2	32.3	32.0
31	32.3	32.0	31.9	32.2	32.2	32.0	31.9	31.7	31.0	32.0	33.6	33.9	33.5	32.4	32.0	31.7
Mean	32.27	32.08	32.24	32.18	32.18	32.35	32.39	31.76	31.38	31.74	32.75	33.68	33.70	33.18	32.48	31.93

NOVEMBER, 1898.

5p	6p	7p	8p	9p	10p	11p	M.N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
32.5	32.7	32.1	32.5	32.1	32.5	32.0	31.8	32.56	34.6	Noon	31.2	7.38 a	3.4	C
32.4	32.7	32.5	32.5	32.7	32.4	32.3	32.4	32.61	34.9	1.00 p	31.2	7.19 a	3.7	C
33.1	32.4	23.1	33.1	32.8	32.4	32.4	32.4	32.50	34.6	11.26 a	30.2	7.43 a	4.4	A
33.1	33.1	33.0	33.3	33.1	32.5	32.8	32.7	33.11	36.2	11.05 a	31.8	5.38 a	4.4	C
32.3	32.5	32.7	33.0	32.8	32.8	32.7	32.8	32.50	34.5	Noon	30.5	7.30 a	4.0	C
32.3	32.4	32.5	32.8	32.8	32.7	32.5	32.5	32.75	34.8	1.00 p	31.5	7.48 a	3.3	C
32.7	32.8	33.1	33.1	32.8	32.8	32.5	32.4	32.72	34.9	Noon	30.3	8.00 a	4.6	C
32.9	33.1	33.0	32.7	32.9	32.6	32.3	32.2	32.47	34.2	Noon	30.7	2.00 a	3.5	C
32.9	32.9	32.7	33.3	33.0	32.9	32.2	32.2	32.48	33.9	Noon	31.7	8.00 a	2.2	C
32.3	32.3	32.7	32.7	32.7	32.5	32.7	32.5	32.36	33.3	0.30 p	31.3	1.00 a	2.0	C
32.3	32.7	32.7	33.2	33.2	32.7	32.7	32.5	32.60	33.9	0.20 p	31.6	8-9 a	2.3	C
32.9	32.7	32.7	32.9	32.9	32.5	32.2	32.2	32.42	33.8	1.00 a	31.0	9.00 a	2.8	C
32.3	32.3	32.7	32.9	32.7	32.5	32.2	32.3	32.67	34.2	0.25 p	31.9	2.00 a	2.3	C
32.3	32.5	32.5	32.6	32.5	32.7	32.6	32.5	32.41	33.6	Noon	31.0	7.40 a	2.6	C
32.4	32.4	32.6	32.7	32.6	31.4	32.2	32.3	32.39	34.1	Noon	31.0	9.00 a	3.1	C a.m., A p.m.
32.2	32.6	32.7	32.9	32.7	32.3	32.7	32.3	32.51	34.1	Noon	31.7	4.00 p	2.2	C
32.2	31.7	31.3	33.5	32.9	33.0	32.3	32.3	32.75	33.9	Noon	30.2	6.22 p	3.7	A
32.3	32.3	32.2	32.3	33.6	32.9	32.3	33.6	32.80	34.7	11.25 a	31.5	2.18 a	3.2	A
32.9	32.9	32.7	32.7	32.3	32.7	32.7	32.4	...	33.5	Noon	31.6	8.00 a	1.9	C
...	...	...	...	...	...	...	...	...	...	...	...	...	...	
31.6	31.6	32.9	32.5	31.0	30.8	33.0	32.7	...	...	...	...	...	...	S* p.m.
32.3	32.5	31.3	32.4	31.4	33.5	31.7	33.3	32.99	**37.0**	11.46 a	**23.9**	8.37 p	8.1	S*
30.8	32.5	30.8	32.6	32.3	31.9	32.7	32.9	32.86	34.5	Noon	30.2	2.00 a	4.3	A
32.3	32.9	32.7	32.9	32.9	32.9	32.9	32.7	32.89	34.4	1.00 p	31.7	8-9 a	2.7	C
32.2	31.3	32.4	32.5	32.2	32.8	32.8	32.5	32.85	33.8	5.48 a	30.9	6.07 p	2.9	C
32.2	33.2	33.1	33.2	33.2	33.4	33.7	31.6	32.78	33.9	N.-1p	31.6	9.00 a	2.3	C a.m., A p.m.
32.2	31.9	32.2	32.6	32.9	32.8	32.6	31.8	32.48	33.7	N.-2p	31.0	8.48 a	2.7	C
32.3	32.6	32.6	32.6	32.8	32.8	32.3	32.3	32.35	34.1	Noon	29.8	2.13 a	4.3	C
32.8	33.1	33.1	32.6	32.2	32.1	32.1	31.9	32.52	33.9	Noon	31.3	9.00 a	2.6	C
32.0	31.8	32.0	32.2	32.3	32.2	32.1	32.0	32.35	34.0	1.00 p	30.7	9.00 a	3.3	C
32.30	32.51	32.43	32.73	32.70	32.61	32.43	32.40	32.62	34.35		30.99		3.33	

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5p	6p	7p	8p	9p	10p	11p	M.N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
31.6	32.2	32.3	32.2	32.3	32.3	32.3	32.2	32.30	35.0	0.30 p	30.4	9.00 p	4.6	C
32.3	32.6	32.6	32.9	33.1	32.5	32.3	32.3	32.60	34.3	Noon	31.5	9.00 a	2.8	C
32.2	32.2	32.3	32.6	32.8	32.6	32.5	32.3	32.75	35.0	2.00 p	31.8	9.00 a	3.2	C
32.5	32.3	32.8	32.6	32.9	33.1	32.3	32.2	32.38	34.4	8.00 a	30.3	2.50 a	4.1	A a.m., C p.m.
31.8	31.9	32.2	32.3	32.3	32.2	32.2	31.9	32.09	33.7	1.00 p	30.9	9.00 a	2.8	C
31.8	32.2	32.1	32.3	32.2	32.3	32.2	32.3	32.04	33.1	Noon	30.3	8.32 a	2.8	A a.m., C p.m.
32.1	31.2	31.0	32.6	32.2	32.1	32.1	32.2	32.02	33.7	1.00 p	30.1	8.12 a	3.6	A
31.8	32.1	32.1	32.2	32.2	32.1	32.1	32.1	32.27	34.7	0.20 p	3 .8	8.30 a	3.9	C
31.7	31.8	31.8	32.1	32.1	32.1	32.1	32.1	32.08	34.6	0.26 p	30.8	8.15 a	3.8	C
31.8	32.0	32.1	32.2	32.5	32.1	32.2	32.1	32.36	33.7	Noon	31.7	8-9 a	2.0	C
32.0	31.7	32.0	32.2	31.5	32.0	32.0	32.1	32.27	34.3	0.30 p	31.1	7.40 a	3.2	C a.m., A p.m.
31.7	31.8	31.7	32.0	31.7	32.0	32.0	31.8	31.99	33.7	0.30 p	30.2	8.45 a	3.5	C
31.7	32.0	31.8	31.8	32.0	31.8	31.7	31.8	32.17	33.9	Noon	31.1	8.00 a	2.8	C
34.0	33.0	32.1	32.2	32.8	32.7	32.2	32.0	32.49	34.0	N. 5p	31.5	2.05 a	2.5	C a.m., A p.m.
31.4	31.2	31.9	32.8	31.8	32.4	32.5	32.2	32.42	34.2	3.00 a	29.6	8.29 p	4.6	A
31.7	31.6	29.8	31.6	32.7	31.9	32.6	31.9	32.40	**35.4**	3.28 a	29.8	7.00 p	5.6	A
32.4	32.7	32.7	32.4	32.7	31.6	32.9	32.9	33.05	35.1	7.50 a	31.0	10.10 p	4.1	A
31.6	31.9	31.7	31.9	32.1	32.4	32.6	32.4	32.41	34.6	Noon	30.5	8.29 p	4.1	C 0a.-5p., A 5p.-M.N.
31.1	31.3	32.0	32.4	32.2	32.4	32.4	32.9	32.43	35.0	0.50 p	30.5	5.30 p	4.5	A
31.6	31.0	31.8	32.0	32.1	32.7	32.4	32.9	32.82	34.6	7.00 p	29.7	4.10 p	4.9	A
31.0	31.4	31.6	31.8	32.0	32.0	32.6	32.3	32.22	34.4	N.-1 p	29.8	8.00 a	4.6	A
31.9	31.9	32.0	32.3	31.9	32.1	32.3	32.3	32.45	34.8	5.35 a	29.5	8.40 a	5.3	C
31.4	31.6	31.8	32.0	31.9	32.0	32.1	32.1	32.28	34.5	1.00 p	29.9	9.20 a	4.6	C
31.3	31.9	30.8	32.6	31.9	31.9	32.1	32.1	32.04	33.2	2.00 p	30.1	9.00 a	3.1	C
31.9	31.9	31.9	32.1	32.1	32.1	32.1	32.1	31.96	33.9	1.00 p	**29.1**	9.00 a	4.8	C
31.9	31.9	32.0	32.0	32.3	32.2	32.1	32.3	31.91	32.7	5.00 a	30.1	10.00 a	2.6	C
31.4	31.3	31.9	32.1	31.9	32.0	31.9	32.0	31.77	33.3	0.25 p	29.8	9.00 a	3.5	C
33.1	33.0	33.6	32.7	32.6	32.4	32.4	32.3	32.52	33.9	6.50 p	31.6	5.00 a	2.3	A
31.9	32.1	32.6	32.7	32.7	31.3	32.3	32.3	32.41	35.1	Noon	30.7	9.10 p	4.4	A
32.0	31.9	32.0	32.1	32.1	31.9	32.0	32.0	32.17	33.3	Noon	29.9	9.30 a	3.4	C 0a.-9p., A 9p.-M.N.
31.9	32.2	32.1	32.3	32.1	32.2	32.1	32.1	32.22	33.9	Noon	31.0	9.00 a	2.9	C
31.89	31.93	31.97	32.26	32.25	32.18	32.25	32.21	32.30	34.19		30.49		3.70	

HORIZONTAL INTENSITY: 0.29 . . . C. G. S.

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
1	811	799	813	808	824	822	816	822	818	810	808	808	809	807	801	804
2	824	823	816	820	823	823	828	823	817	797	801	817	818	825	830	829
3	826	829	827	826	827	830	832	831	816	810	814	816	816	822	826	826
4	826	824	823	829	829	828	833	834	827	821	827	831	828	831	833	837
5	830	828	825	824	823	826	831	825	813	804	802	802	816	811	822	828
6	824	821	822	825	824	826	826	819	811	805	810	812	821	823	829	830
7	829	827	830	828	829	829	834	834	820	807	802	806	817	822	825	824
8	824	826	825	825	826	827	828	836	836	832	830	829	830	834	840	834
9	832	830	831	832	832	830	831	825	820	815	817	824	830	835	834	829
10	826	827	830	831	830	826	824	827	821	819	835	844	855	861	859	853
11	812	809	809	810	822	820	828	828	820	818	819	816	814	815	816	805
12	816	816	818	818	820	818	820	823	814	808	810	824	827	832	833	829
13	820	820	818	820	822	818	817	809	806	811	808	816	819	830	828	828
14	834	839	839	838	839	844	841	848	839	834	838	848	851	851	851	853
15	838	836	835	834	838	833	831	824	814	819	832	835	838	842	842	840
16	842	856	845	830	824	842	845	837	821	810	817	824	825	833	835	833
17	837	839	826	828	821	818	824	813	825	823	811	804	804	813	816	812
18	832	826	823	827	815	830	833	816	818	805	800	796	803	810	819	825
19	836	817	822	828	817	810	815	808	800	799	798	797	799	805	822	824
20	833	812	816	811	821	811	815	815	808	810	817	815	815	816	818	823
21	815	818	822	823	831	826	825	828	812	809	811	809	811	808	812	810
22	819	824	833	826	823	827	824	829	828	817	826	830	831	821	812	806
23	819	817	822	820	820	824	830	832	830	828	835	837	...	...	...	...
24	823	822	821	823	825	825	829	832	829	828	842	846	848	843	838	835
25	832	834	834	834	838	838	837	837	831	833	837	848	845	844	843	838
26	823	824	824	823	826	827	832	834	834	840	842	843	840	843	830	832
27	821	820	818	824	824	830	827	824	817	816	821	822	837	839	838	830
28	813	812	823	831	831	831	822	819	815	810	813	820	816	826	809	812
29	822	826	824	822	825	821	820	819	816	815	820	822	828	827	827	829
30	829	833	837	831	827	830	828	825	821	822	816	815	820	824	831	833
31	828	835	835	835	839	834	830	825	808	800	806	820	827	837	835	841
Mean	826.2	825.1	825.5	825.5	826.5	827.0	826.9	825.6	819.2	814.9	817.7	821.3	824.3	827.7	828.5	827.7

HORIZONTAL INTENSITY: 0.29 . . . C. G. S.

1	839	841	841	843	843	844	847	852	848	838	836	835	841	843	844	849
2	847	846	847	849	847	842	845	837	838	826	826	832	839	846	852	851
3	830	830	832	837	833	833	834	836	833	837	840	850	848	848	848	848
4	829	827	830	836	837	842	844	850	851	853	854	850	844	847	847	849
5	841	844	847	849	851	855	849	868	871	873	871	870	872	872	869	868
6	837	841	857	838	841	848	848	844	836	845	836	839	837	832	827	823
7	841	844	840	850	853	859	856	854	843	850	853	852	849	845	845	844
8	841	837	839	839	839	841	840	839	837	834	840	840	855	856	852	850
9	840	838	836	844	837	834	838	837	834	833	836	846	848	846	849	842
10	839	840	837	836	836	834	828	825	820	818	821	829	844	845	843	837
11	838	841	841	839	840	836	835	832	841	848	852	852	839	837	817	832
12	803	787	813	798	801	796	801	800	801	796	799	796	820	817	812	804
13	818	820	818	816	823	811	825	810	808	810	818	820	821	827	826	822
14	824	816	815	914	819	817	821	813	810	807	803	804	822	830	832	817
15	820	807	810	801	801	803	795	803	809	807	813	803	816	823	822	817
16	832	818	833	827	828	825	834	839	835	823	829	825	823	825	823	828
17	828	831	824	824	826	828	829	826	827	822	824	818	823	832	828	828
18	840	826	822	818	818	817	820	817	822	827	833	822	828	829	830	828
19	833	836	832	831	831	830	830	825	815	817	813	814	823	831	835	840
20	827	829	828	831	830	832	839	839	840	842	848	844	832	839	841	826
21	829	835	828	825	820	820	827	827	835	833	832	836	829	833	839	844
22	834	831	829	818	817	821	824	824	824	818	821	821	831	830	829	828
23	824	823	820	821	820	823	826	819	820	823	822	816	818	825	830	823
24	830	833	832	828	826	827	827	830	823	822	813	805	819	827	833	837
25	833	837	832	834	829	826	831	820	814	809	805	805	816	825	834	838
26	839	842	840	837	841	839	845	843	842	838	827	814	824	833	840	846
27	836	835	836	838	840	841	852	855	852	855	855	852	850	854	858	860
28	837	837	837	836	834	840	846	848	840	847	848	851	850	852	860	857
Mean	832.5	831.1	832.0	830.6	830.7	830.9	833.4	832.6	831.0	830.4	831.0	830.0	834.3	837.5	838.0	837.4

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5p	6p	7p	8p	9p	10p	11p	M. N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
809	817	819	823	814	809	828	828	813.6	830	11.10 p	796	1.15 a	34	A
832	832	829	830	825	828	821	821	822.2	837	0.20 a	793	10.24 a	44	A
826	826	826	823	821	823	822	822	823.5	838	7.40 a	810	10.00 a	28	C
837	837	833	831	829	829	823	827	829.5	837	6.00 p	821	10.00 a	16	C
828	828	828	827	826	824	823	824	821.2	831	7.00 a	802	11.00 a	29	C
832	830	831	832	833	831	831	829	824.0	834	10.25 p	805	10.00 a	29	C
824	824	825	827	827	827	826	827	823.7	835	7.20 a	802	11.00 a	33	C
832	831	831	828	828	825	825	826	829.5	840	3.00 p	824	1.00 a	16	C
830	832	833	832	828	829	826	828	828.5	834	7.10 p	815	10.00 a	19	C
849	847	845	843	842	823	815	807	835.0	**863**	1.50 p	807	M.N.	56	C a.m., A p.m.
787	786	775	779	796	808	810	810	808.8	828	8.00 a	**775**	7.00 p	53	A
822	816	818	819	822	821	823	823	820.4	833	3.00 p	808	10.00 a	25	C
824	827	825	826	826	828	835	835	821.5	836	11.30 p	804	10.20 a	32	C
853	850	848	843	841	337	837	837	843.0	853	4–5 p	831	9.40 a	22	C
842	838	840	839	836	834	837	839	834.8	842	2.00 p	814	9.00 a	28	C
813	809	829	820	821	819	824	821	828.1	856	2.00 a	799	5.24 p	57	S'
817	818	817	818	818	851	826	813	820.5	856	1.22 a	799	0.36 p	57	A
826	830	819	813	822	815	818	842	819.3	851	11.48 p	796	Noon	55	A
826	819	811	808	805	810	821	816	813.0	845	1.10 a	796	0.54 p	49	A
828	822	815	798	810	818	826	817	816.2	841	0.40 a	798	8.00 p	43	A
817	820	818	819	819	816	821	822	817.6	831	5.00 a	808	2.00 p	18	A a.m., C p.m.
812	816	816	815	813	817	818	818	820.9	833	8.21 a	805	3.48 p	28	C
...	...	...	...	...	...	...	...	...	...	...	...	...	...	C
840	838	840	839	834	833	826	828	832.8	848	1.00 p	821	3.00 a	27	C
837	836	830	817	806	810	811	817	832.0	848	Noon	802	9.15 p	46	C
832	827	814	817	825	816	820	822	828.7	846	11.10 a	812	7.10 p	34	A
825	825	823	823	819	816	819	818	824.0	839	2.00 p	810	10.35 p	29	A
812	812	813	812	815	815	821	820	817.6	831	5.00 a	791	4.21 p	40	C a.m., A 0–7p., C 7p.-M.N.
831	829	828	822	827	827	828	826	824.2	831	5.00 p	813	10.40 a	18	C
831	827	826	822	822	824	821	822	825.7	839	3.15 a	813	0.15 p	26	C
839	839	835	839	840	838	836	839	830.8	840	9.00 p	800	10.00 a	40	C
827.1	826.3	824.7	822.8	823.0	823.4	823.9	824.1	824.4	840.2		805.7		34.5	

FEBRUARY, 1898.

5p	6p	7p	8p	9p	10p	11p	M. N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
852	852	850	849	847	853	847	847	845.0	853	10.00 p	835	Noon	18	C
842	842	842	845	844	842	837	832	841.5	852	3.00 p	825	10.25 a	27	C
844	845	845	844	845	844	840	834	839.9	854	0.30 p	827	1.30 a	27	C
843	846	845	844	840	847	844	845	843.5	854	11.00 a	827	2.00 a	27	C
851	853	851	848	847	849	847	840	856.5	874	8.45 a	840	1.35 a	34	C a.m., A p.m.
833	840	841	833	830	827	828	829	837.1	**888**	2.40 a	822	3.50 p	66	A
844	840	839	836	838	840	841	843	845.8	859	6.00 a	836	8.00 p	23	C
849	842	830	828	835	838	838	834	840.5	857	2.10 p	826	7.45 p	31	C
834	827	835	833	833	832	840	838	837.9	849	3.00 p	827	6.00 p	22	C
837	843	844	842	846	843	841	843	836.4	846	9.00 p	818	10.00 a	28	C
839	833	833	823	795	805	803	781	830.5	853	11.20 p	781	M.N.	72	C 0-8a., S' 8a.-M.N.
796	805	781	811	806	796	815	827	803.5	830	11.55 p	**773**	1.40 a	57	S'
818	807	817	816	811	810	812	813	816.5	827	2.00 p	804	5.50 p	23	A
815	779	822	811	807	833	801	828	815.0	835	10.03 p	779	6.00 p	56	A
783	783	784	791	809	806	828	827	806.7	828	11.00 p	780	6.05 p	48	A
820	817	823	826	821	818	822	822	825.7	839	8.00 a	817	6.00 p	22	A
826	829	827	827	822	837	829	820	826.5	838	10.03p	818	Noon	20	C 0a.–9p., A 9p.–M.N.
832	836	832	832	826	829	827	831	826.7	840	1.00 a	816	5.40 a	24	A 0–2a., C 2a.–M.N.
844	850	842	840	838	834	829	826	830.8	850	6.00 p	812	11.10 a	38	C
818	826	812	822	831	828	830	833	832.0	849	11.45 a	810	6.55 p	39	C a.m., A p.m.
814	814	826	826	824	827	844	835	829.2	850	10.45 p	811	5.05 p	39	A
817	819	822	823	820	829	826	833	824.5	843	11.40 p	810	4.40 a	33	C
832	830	829	828	832	828	827	829	824.9	834	4.15 p	815	0.20 p	19	C
832	832	832	321	824	832	831	831	827.0	837	4.00 p	805	Noon	32	C
839	841	837	835	835	835	840	836	828.6	840	11.00 p	804	11.08 a	36	C
849	848	845	844	842	843	843	840	839.3	849	5.00 p	814	Noon	35	C
853	847	846	845	840	841	840	836	846.5	860	4.00 p	835	2.00 a	25	C
853	848	848	844	846	847	845	849	845.8	860	3.00 p	834	5.00 a	26	C
832.5	831.2	831.6	831.0	829.8	831.9	832.1	831.5	832.3	848.1		814.3		33.8	

HORIZONTAL INTENSITY: 0.29 . . . C. G. S.

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
1	838	839	843	844	845	848	853	851	842	843	841	836	845	850	855	856
2	844	841	841	844	854	871	855	854	837	865	851	847	851	851	830	780
3	803	810	808	812	807	807	811	813	813	821	815	817	822	832	835	836
4	823	824	818	820	819	822	820	815	807	801	804	808	820	824	828	828
5	819	820	823	821	821	822	827	827	821	815	812	809	812	827	828	831
6	811	804	803	812	820	820	820	815	809	795	791	787	806	824	827	834
7	810	815	807	814	814	821	820	820	798	783	783	785	800	815	829	932
8	830	829	826	827	828	817	820	820	809	795	791	810	826	835	844	818
9	840	842	840	842	843	829	833	821	800	809	812	824	810	835	847	846
10	832	838	837	835	833	837	835	833	825	813	805	811	826	835	831	819
11	830	832	848	824	819	819	820	817	799	789	780	795	811	834	842	839
12	796	807	807	800	805	792	790	802	794	791	785	774	780	795	793	813
13	815	819	821	817	812	810	808	793	775	758	763	773	772	794	800	809
14	822	812	813	813	813	810	812	803	799	795	787	794	809	819	829	828
15	816	816	815	815	816	823	813	822	810	814	782	751	791	776	812	805
16	766	753	705	778	719	744	719	717	653	654	636	660	732	632	691	696
17	770	783	773	776	770	772	772	767	758	750	754	763	767	778	787	789
18	787	808	809	809	807	806	804	805	800	798	792	785	793	810	815	816
19	824	783	816	814	801	792	800	800	790	787	783	779	786	792	801	794
20	804	799	808	808	806	806	798	795	792	792	787	783	798	793	786	797
21	806	806	806	802	804	807	807	807	800	787	789	791	798	806	818	818
22	803	796	794	795	797	797	801	796	793	786	777	779	787	801	798	799
23	806	804	802	801	800	794	795	796	784	773	775	779	794	802	807	800
24	804	804	810	810	805	808	815	805	802	795	795	795	804	812	814	816
25	810	813	816	813	816	821	828	823	814	805	798	798	811	817	811	811
26	815	816	814	810	811	812	813	804	797	791	789	799	808	812	825	830
27	806	807	818	815	813	819	822	819	810	799	795	806	818	825	822	814
28	815	818	815	813	817	817	815	809	798	801	801	804	815	835	835	840
29	832	826	825	826	823	826	826	826	814	801	798	802	813	827	833	841
30	830	831	826	823	816	826	824	820	805	794	796	802	818	827	833	830
31	814	817	820	816	815	819	818	816	818	819	814	824	835	837	814	812
Mean	813.6	813.3	813.4	814.5	811.9	813.3	812.7	810.0	800.2	794.8	791.3	792.6	805.7	813.1	818.2	817.3

HORIZONTAL INTENSITY: 0.29 . . . C. G. S.

1	849	842	842	837	837	839	834	827	817	811	809	820	826	826	841	848
2	834	832	830	834	832	833	833	825	822	813	813	813	825	829	836	836
3	822	813	820	818	822	826	823	813	805	790	794	810	819	821	825	817
4	814	815	813	818	816	821	828	810	820	821	833	822	817	819	818	809
5	810	801	802	823	803	803	804	801	803	801	812	824	838	838	823	822
6	818	812	812	825	818	822	825	812	806	794	802	813	835	846	843	833
7	809	807	805	820	828	828	828	815	801	793	785	785	791	809	800	808
8	785	797	807	801	793	793	785	795	795	794	797	805	813	801	817	811
9	813	813	819	813	808	805	799	799	793	792	792	793	811	817	826	823
10	812	818	818	821	818	818	812	803	793	775	779	799	816	820	817	813
11	815	816	815	811	811	810	810	804	792	785	785	794	810	824	824	824
12	816	819	818	815	813	815	815	805	802	793	807	818	834	838	830	800
13	787	790	790	796	801	792	786	786	780	780	786	800	816	818	815	815
14	827	823	820	818	818	818	815	812	793	800	808	797	817	833	831	813
15	811	821	827	829	829	829	829	829	833	839	839	837	839	854	856	818
16	839	838	836	831	837	831	818	818	813	811	827	812	829	829	829	836
17	833	832	831	829	829	818	821	818	818	806	817	820	829	839	833	839
18	839	843	837	835	835	829	829	823	821	809	813	831	848	848	850	843
19	828	827	829	831	830	830	824	818	812	831	830	840	851	858	859	855
20	842	840	846	849	849	840	832	820	803	810	810	819	836	851	855	852
21	849	349	849	819	849	855	849	842	822	816	824	844	862	871	867	861
22	836	842	844	835	838	835	828	816	816	819	833	848	857	854	849	845
23	839	841	836	835	833	834	834	831	828	825	840	854	862	859	854	845
24	834	834	831	834	837	837	831	825	817	823	832	841	850	844	841	832
25	839	844	844	844	844	844	830	834	824	825	831	843	852	860	863	861
26	854	851	848	848	847	850	850	852	814	835	837	837	839	843	857	862
27	860	859	830	858	858	865	866	861	857	854	960	830	876	882	881	875
28	871	836	883	888	883	883	876	879	873	873	852	875	879	877	866	853
29	862	859	857	859	852	866	836	859	848	843	854	860	873	879	879	869
30	865	861	852	861	852	851	817	845	843	846	853	862	863	868	878	881
Mean	830.4	830.8	831.1	832.2	831.1	830.7	827.9	822.6	816.4	813.7	819.0	826.0	837.1	841.8	842.3	837.9

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5p	6p	7p	8p	9p	10p	11p	M.N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
852	854	849	851	849	847	845	845	846.7	856	4.00 p	833	0.05 p	23	C
733	750	775	784	789	798	794	806	824.7	**871**	6.00 a	**733**	5.00 p	138	C 0-4a., A 4a.-M.N.
832	829	826	826	824	820	819	822	819.2	836	4.00 p	803	1.00 a	33	C
831	822	820	818	814	818	820	818	818.5	831	5.00 p	803	1.05 a	28	C
829	828	831	829	822	816	819	822	822.1	831	4p, 7 p	809	Noon	22	C
828	795	807	819	815	812	807	807	811.2	836	4.10 p	787	Noon	49	A
831	838	834	834	834	828	837	830	817.4	838	6.00 p	783	11.00 a	55	A a.m., C p.m.
846	844	843	844	839	844	844	847	829.4	848	4.00 p	791	11.00 a	57	C
840	838	834	835	831	837	833	836	832.7	848	3.15 p	808	9.30 a	40	C
825	827	828	830	833	828	829	831	828.2	838	2.00 a	802	10.50 a	36	A
810	829	840	842	828	823	815	782	819.8	849	3.10 a	773	11.50 p	76	A
816	810	807	807	807	807	813	819	801.0	816	5.00 p	774	Noon	42	A
812	803	794	806	812	812	812	812	800.5	823	8.35 p	760	10.42 a	63	A
825	822	821	819	819	819	820	817	811.3	829	3.00 p	787	11.00 a	42	C
756	763	763	785	788	788	788	794	795.9	823	6.00 a	737	5.25 p	86	C 0-10a., S^1 10a.-M.N.
713	709	706	709	734	772	742	745	715.2	794	0.06 a	647	13.30 a	147	S^2
786	790	783	785	784	786	788	792	776.0	794	11.45 p	750	10.00 a	44	A a.m., C p.m.
813	816	814	814	812	813	813	806	806.0	816	4.00 p	785	Noon	31	A
801	801	801	794	788	788	785	812	796.3	830	0.50 a	779	Noon	51	A
793	798	803	791	805	836	814	801	799.8	839	10.10 p	783	Noon	56	A
800	797	795	800	793	796	797	805	801.5	819	3.25 p	787	10.00 a	32	A
801	798	805	803	801	804	805	803	796.6	805	11.00 p	777	11.00 a	28	C
797	797	803	803	778	809	809	806	796.5	809	11.00 p	773	11.10 a	36	C
821	817	808	812	809	812	802	808	807.7	821	5.00 p	795	10.40 a	26	C
805	798	798	808	814	814	814	812	811.2	828	7.00 a	797	6.38 p	31	C
825	825	823	820	820	818	809	805	812.1	832	3.30 p	787	10.30 a	45	A
827	814	814	812	818	815	815	816	814.2	832	1.30 p	793	10.52 a	39	A
830	819	813	813	819	813	825	834	817.3	840	4.00 p	790	8.55 a	50	A
833	819	816	819	823	825	823	825	821.8	841	4.00 p	798	11.00 a	43	A
814	804	811	315	818	816	805	811	816.5	835	2.55 p	794	10.00 a	41	C
840	834	834	837	842	845	850	851	829.2	851	M.N.	811	0.01 a	40	C
811.1	809.3	809.6	811.7	811.7	814.8	812.6	813.5	809.6	830.9		781.6		49.3	

APRIL, 1898.

5p	6p	7p	8p	9p	10p	11p	M.N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
842	841	837	837	837	834	831	829	833.0	852	0.20 a	808	10.35 a	44	C
834	825	827	828	826	828	820	824	827.2	836	3.00 p	813	10.00 a	23	C
815	812	815	815	816	816	814	814	814.8	826	6.00 a	790	10.00 a	36	C
800	806	815	818	815	813	805	802	815.5	836	11.00 a	800	5.00 p	36	A
816	818	818	813	813	813	820	826	814.6	838	1.00 p	801	1.00 a	37	A
826	817	817	817	816	811	810	808	818.4	846	2.00 p	794	10.00 p	52	A
793	761	767	773	773	783	794	789	797.7	828	5.00 a	**761**	6.00 p	67	S^1
808	811	802	802	815	803	806	813	802.0	817	3.00 p	785	1.00 a	32	A
818	818	815	812	815	815	820	824	810.7	826	3.00 p	792	11.00 a	34	A
813	810	804	804	822	816	816	816	809.7	822	9.00 p	775	10.00 a	47	C
818	812	812	810	816	816	820	820	810.6	824	3.00 p	785	10.00 a	39	C
791	773	773	761	785	781	775	781	802.4	838	2.00 p	**761**	8.00 p	77	C a.m., S^1 p.m.
809	813	817	823	825	833	821	827	804.4	833	10.00 p	780	9.00 a	53	A
822	811	804	804	780	798	800	800	810.9	833	2.00 p	780	9.00 p	53	A
842	842	835	835	835	835	842	848	836.0	868	11.30 p	811	1.00 a	57	A
827	824	822	822	825	831	829	827	826.7	839	1.00 a	811	10.00 a	28	A
839	833	827	833	833	833	839	839	828.7	839	2.00 p	806	10.00 a	33	C
837	837	837	839	833	833	837	823	833.7	850	3.00 p	805	10.30 a	45	A
846	840	840	840	843	846	846	846	837.9	859	3.00 p	812	9.00 a	47	C
855	849	846	849	849	849	849	849	839.5	855	3.00 p	803	9.00 a	52	C
848	842	842	845	842	838	837	839	845.5	871	2.00 p	816	10.00 a	55	C
844	837	835	835	835	839	840	838	837.5	857	1.00 p	216	8.00 a	41	C
834	843	853	847	837	834	831	831	840.1	862	1.00 p	825	10.00 a	37	A
838	844	844	844	844	844	844	844	837.0	850	1.00 p	817	9.00 a	33	C
849	842	845	851	851	851	851	854	845.2	863	3.00 p	824	9.00 a	39	C
864	858	856	862	864	860	863	867	852.0	867	M.N.	835	10.00 a	32	C
874	868	868	868	870	872	871	868	866.3	882	2.00 p	854	10.00 a	28	C
856	846	856	856	856	856	856	849	868.1	**888**	4.00 a	846	6.00 a	42	A
871	870	865	866	866	860	860	860	862.8	879	2p, 3 p	848	9a, 10a	31	C
885	878	882	882	875	865	868	869	864.8	885	5.00 p	843	9.00 a	42	C
833.8	829.4	829.2	829.7	830.4	830.2	830.5	830.8	829.8	849.0		806.6		42.4	

HORIZONTAL INTENSITY: 0.29 . . . C. G. S.

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
1	874	870	868	872	875	874	871	855	846	859	858	868	880	871	869	873
2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	864	862	868	866	864	863	857	859	859	872	882	890	896	898	898	892
4	870	870	871	870	870	866	869	876	887	900	896	899	910	894	861	865
5	860	860	859	857	860	856	856	856	844	852	861	862	846	845	860	868
6	889	872	866	866	867	868	872	873	868	873	872	877	887	893	893	897
7	890	885	883	877	877	881	877	874	869	863	867	878	882	885	887	886
8	876	877	879	877	882	878	871	871	848	848	845	862	869	877	883	883
9	882	883	883	881	887	889	886	879	870	...	...	...	...	...	...	...
10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15	...	...	...	...	...	...	...	...	...	...	...	838	843	843	843	825
16	821	823	827	827	830	829	826	823	819	824	834	841	845	849	847	838
17	831	834	833	836	837	840	838	835	830	831	843	842	843	856	854	836
18	833	831	831	834	832	834	825	825	827	826	835	843	845	843	835	840
19	842	841	839	837	841	842	837	826	819	828	843	857	870	871	868	854
20	842	847	844	845	852	854	845	827	827	838	843	849	842	865	859	859
21	847	846	852	851	853	853	841	824	817	822	830	835	839	844	849	849
22	842	845	843	842	843	842	838	839	841	838	838	851	860	864	858	857
23	843	852	847	848	843	835	820	815	822	837	846	854	858	860	862	857
24	843	840	841	844	849	855	850	838	827	818	828	838	843	850	855	854
25	846	844	844	842	847	840	834	825	827	834	841	846	852	856	858	859
26	852	850	853	853	858	856	857	841	828	823	830	834	838	847	858	860
27	848	851	853	846	852	857	852	849	845	851	852	852	853	858	866	865
28	849	853	852	851	868	869	856	838	829	836	849	852	843	845	853	862
29	835	836	844	840	839	835	829	810	814	814	840	863	869	...	...	...
30	854	846	857	853	854	843	836	822	823	829	836	850	800	820	836	832
31	863	836	835	840	844	829	828	821	815	806	802	819	819	832	818	827
Mean	852.6	850.7	851.2	850.6	853.5	851.9	846.9	840.8	836.7	840.4	846.3	853.9	854.3	859.6	859.9	859.0

HORIZONTAL INTENSITY: 0.29 . . . C. G. S.

1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	808	807	809	804	811	812	802	789	787	789	792	798	802	811	813	813
4	812	810	813	811	816	815	813	807	799	801	811	828	836	830	819	814
5	824	819	818	820	821	819	812	804	807	809	819	822	828	832	834	834
6	827	823	820	820	823	820	815	814	819	823	829	831	834	837	844	841
7	826	825	825	824	823	819	826	829	825	834	866	892	897	906	890	836
8	827	829	827	824	821	820	825	819	814	818	829	834	836	839	830	824
9	833	832	836	837	836	833	829	817	824	835	839	842	845	848	850	852
10	830	831	828	825	828	822	820	820	820	827	834	842	848	850	852	850
11	834	832	835	833	837	830	822	814	815	821	819	814	822	831	842	844
12	832	836	833	835	833	833	831	833	829	835	838	838	836	833	836	836
13	831	831	833	832	835	837	837	832	827	829	834	829	839	838	839	845
14	838	833	831	829	825	821	813	811	827	814	815	823	822	819	823	825
15	827	825	824	828	831	819	817	817	818	820	827	834	840	855	853	851
16	823	824	830	828	828	823	818	808	797	803	812	826	831	830	833	828
17	834	834	834	832	830	835	835	834	826	818	817	814	822	833	833	830
18	828	829	831	831	827	825	824	831	831	823	827	828	835	841	845	845
19	837	834	832	831	840	840	848	849	838	847	846	850	857	857	863	857
20	833	829	831	831	832	833	823	821	821	825	833	841	846	850	852	842
21	841	838	839	841	838	839	835	834	835	839	841	843	851	854	849	840
22	831	833	836	834	835	834	832	826	824	826	831	831	837	843	848	849
23	845	850	850	843	858	856	842	845	858	870	877	860	845	857	853	847
24	835	840	835	837	837	835	819	808	820	829	839	857	857	869	870	861
25	843	844	842	844	850	850	846	841	838	824	836	842	847	854	854	845
26	850	848	837	832	835	838	851	843	842	847	845	855	862	860	856	860
27	826	833	831	832	831	827	806	802	797	806	829	852	860	845	835	837
28	830	829	832	832	832	829	818	809	802	796	798	819	832	840	842	834
29	841	845	844	841	841	834	834	833	819	823	824	823	821	830	843	844
30	832	835	832	832	839	834	828	819	812	817	812	825	821	825	833	831
Mean	831.4	831.3	831.0	830.1	832.9	829.7	825.7	821.8	820.4	823.1	829.2	835.5	839.6	843.5	844.1	839.8

MAY, 1898.

5p	6p	7p	8p	9p	10p	11p	M. N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
875	868	868	855	852	...	...	...	...	...	...	...	...	...	A
...	...	...	859	860	863	862	863	...	...	...	...	...	...	A
886	881	879	886	883	877	877	873	876.3	898	2.00 p	857	7.00 a	41	C
828	831	854	847	847	847	854	851	868.0	**913**	1.10 p	828	5.00 p	85	A a.m., S' p.m.
868	862	864	852	875	870	874	877	860.2	904	11.20 p	834	1.50 p	70	A
890	886	884	886	892	891	890	888	880.8	897	4.00 p	866	3.00 a	31	C
882	877	882	885	876	877	873	873	878.6	890	1.00 a	863	10.00 a	27	C
876	871	876	879	879	875	877	886	872.7	886	M.N.	845	11.00 a	41	C
...	...	...	...	...	...	...	...	...	...	...	...	...	...	C
...	...	...	..	...	...	...	...	...	...	...	...	...	...	A
...	...	...	...	...	...	...	...	...	...	...	...	...	...	A
...	...	...	...	...	...	...	...	...	...	...	...	...	...	A
...	...	...	...	...	...	...	...	...	...	...	...	...	...	A
...	...	...	...	...	...	...	...	...	...	...	...	...	...	C a.m.
815	793	822	826	823	820	823	822	...	...	...	...	...	...	... A p.m.
838	834	832	830	836	837	832	830	832.2	849	2.00 p	821	1.00 a	28	A
827	831	835	834	833	833	834	833	836.6	856	2.00 p	827	5.00 p	29	A
840	837	835	837	847	842	844	844	836.0	847	9.00 p	825	8.00 a	22	A
845	845	847	851	850	847	845	845	845.4	871	2.00 p	819	9.00 a	52	A
857	842	851	855	855	853	855	856	848.4	867	2.25 p	827	8.00 a	40	A
847	844	841	841	840	838	840	846	841.2	853	5.00 a	817	9.00 a	36	C
850	850	846	849	849	845	844	840	846.4	864	2.00 p	837	10.20 a	27	C
852	847	846	846	846	843	844	846	844.5	862	3.00 p	815	8.00 a	47	C
853	853	854	855	856	857	851	849	845.9	857	10.00 p	818	10.00 a	39	C
860	857	854	856	857	856	855	848	847.4	860	5.00 p	825	8.00 a	35	C
852	848	848	850	850	848	847	845	846.9	860	3.30 p	823	10.00 a	37	A
863	861	861	863	853	840	851	849	853.8	866	3.00 p	838	9.30 p	28	A
849	849	846	842	841	834	834	837	847.4	873	5.15 a	829	9.00 a	44	A
...	...	854	840	842	863	856	855	...	...	...	...	...	...	A
812	814	802	833	820	820	837	841	832.1	854	5.05 a	**792**	1.09 p	62	A a.m., S' p.m.
831	831	833	827	823	818	824	826	827.0	863	1.00 a	**792**	10.40 a	71	A
852.7	850.0	850.9	852.6	852.8	849.9	851.5	851.6	850.9	871.0		828.5		42.5	

JUNE, 1898.

5p	6p	7p	8p	9p	10p	11p	M. N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
...	...	...	...	...	...	...	...	...	...	...	...	...	...	A
...	...	...	...	...	...	...	...	...	...	...	...	...	...	A
813	811	809	813	813	809	808	811	805.6	817	8.20 p	**787**	9.00 a	30	A
813	816	820	822	821	825	825	824	816.7	836	1.00 p	799	9.00 a	37	C
833	836	831	831	827	828	829	834	823.8	836	6.00 p	803	8.33 a	33	C
837	830	824	821	823	826	829	830	826.7	844	3.00 p	814	8.00 a	30	C
820	827	836	828	836	826	830	835	840.9	**906**	2.00 p	818	10.30 p	88	A 0-9a., S 9a.-M.N.
829	820	830	830	849	833	837	836	828.3	849	9.00 p	814	9.00 a	35	S'
845	840	836	830	831	836	832	832	836.2	852	4.00 p	817	8.00 a	35	A
850	852	852	844	842	831	839	836	836.4	854	3.21 p	819	8.43 a	35	C
840	837	839	841	842	840	840	739	831.7	847	3.40 p	810	7.33 a	37	A
736	834	832	837	836	836	832	833	834.3	839	3.36 a	828	1.42 p	11	C
845	843	845	846	847	843	841	839	837.4	847	9.00 p	827	9.00 a	20	C
823	825	827	827	830	827	823	826	824.0	839	0.51 a	811	7.40 a	28	C
849	834	836	841	838	836	830	817	832.0	855	2.30 p	815	11.43 p	40	C a.m., A p.m.
822	826	823	825	831	829	830	830	823.3	833	3.00 p	893	11.05 a	40	A
831	830	831	832	836	836	830	828	829.8	836	9-10 p	812	0.15 p	24	C
842	839	847	840	841	841	841	839	834.6	847	7.00 p	823	10.50 a	24	C
837	837	838	835	837	835	834	833	842.2	863	3.00 p	827	5.27 p	36	A
838	836	838	841	841	841	838	841	835.7	852	3.00 p	819	7.25 a	33	C
832	831	834	834	833	834	834	830	838.3	855	2.15 p	830	M.N.	25	C
844	840	838	839	840	842	845	843	836.7	849	4.00 p	824	8.45 a	25	C
831	825	829	833	831	831	827	831	845.6	877	11.00 a	824	5.33 p	53	A
854	848	841	340	845	845	848	850	842.5	872	2.33 p	808	8.05 a	64	A
841	841	850	849	848	845	845	847	844.4	854	3.00 p	817	10.04 a	37	A
856	845	825	826	820	818	821	825	841.5	862	1.00 p	807	8.42 p	55	S'
844	837	832	854	828	839	837	845	831.9	860	1.09 p	797	7.32 a	63	S'
835	836	838	837	842	842	841	841	828.6	845	9.24 p	793	9.42 a	52	A
843	837	834	834	843	844	842	840	835.7	853	3.35 p	819	9.00 a	34	A
833	833	831	831	833	829	833	831	828.4	839	5.00 a	812	11.00 a	27	A
836.3	833.8	833.8	834.3	835.1	833.8	833.6	833.8	832.6	850.6		813.1		37.5	

HORIZONTAL INTENSITY: 0.29 . . . C. G. S.

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
1	836	830	830	827	828	823	812	819	814	825	836	834	842	845	848	849
2	840	839	837	842	840	839	823	836	844	855	864	863	865	868	858	849
3	834	834	832	832	828	827	826	820	832	836	859	873	865	862	861	863
4	855	851	846	847	845	845	833	830	832	835	844	846	855	858	862	857
5	...	...	...	...	...	...	...	...	815	829	843	851	849	850	859	852
6	849	847	846	847	853	851	833	818	812	816	822	839	842	851	842	847
7	846	853	852	853	856	853	839	822	826	822	832	834	835	837	848	849
8	843	842	840	841	849	848	832	828	834	842	853	856	861	863	866	862
9	849	851	855	848	849	846	841	836	848	845	852	857	865	868	867	865
10	844	842	844	845	847	843	840	840	854	859	860	862	864	872	865	858
11	852	854	848	848	847	846	842	830	838	857	861	869	880	881	879	877
12	843	850	854	857	858	856	851	847	844	847	855	862	868	881	881	875
13	859	864	858	857	857	856	849	867	869	860	858	860	854	857	862	864
14	844	851	851	851	854	851	849	848	846	847	854	858	860	852	851	854
15	854	850	850	847	845	845	839	839	842	840	844	854	854	853	855	852
16	858	854	852	851	848	849	...	...	...	...	...	871	869	876	876	874
17	868	863	852	851	847	844	841	838	843	849	860	865	866	874	871	858
18	863	862	860	861	861	851	844	844	844	846	849	864	866	874	876	865
19	865	870	865	860	862	860	847	841	855	864	876	887	881	886	889	888
20	892	895	880	873	864	856	854	855	843	851	885	899	881	822	813	849
21	846	848	838	836	832	838	835	837	833	846	...	...	...	...	...	...
22	863	852	864	857	865	860	847	849	838	861	868	878	867	842	847	841
23	872	869	876	864	873	862	847	846	851	850	848	853	855	870	872	848
24	861	852	854	845	854	852	842	837	836	844	860	856	858	861	863	864
25	843	851	860	854	857	852	842	842	853	852	851	856	871	877	872	868
26	875	853	854	853	852	853	836	832	844	839	853	854	861	855	856	856
27	871	870	869	868	867	868	866	866	877	876	874	862	868	877	895	897
28	877	876	878	875	875	863	855	854	849	853	854	863	872	884	887	895
29	874	875	873	869	870	873	871	871	871	871	875	872	874	876	886	890
30	866	864	864	864	862	858	850	862	865	873	887	899	900	890	894	888
31	888	892	892	888	880	838	858	857	871	867	877	875	887	889	890	891
Mean	858.2	857.4	856.0	854.7	855.5	852.7	843.5	842.4	846.0	849.9	858.0	863.1	865.3	865.8	866.4	865.3

HORIZONTAL INTENSITY: 0.29 . . . C. G. S.

1	884	884	890	889	890	881	875	861	859	886	890	902	896	891	891	886
2	876	878	881	879	890	894	888	888	878	875	882	881	890	887	878	874
3	872	873	877	876	872	872	865	854	856	856	854	856	867	858	845	845
4	858	858	857	875	872	857	852	849	847	853	876	884	874	873	865	858
5	871	876	873	861	874	873	858	855	853	866	869	882	888	887	884	874
6	877	878	875	875	874	868	858	849	846	861	875	888	895	897	896	891
7	882	884	879	876	873	872	866	852	853	858	861	870	880	888	895	893
8	873	867	867	864	863	866	867	863	860	859	857	852	845	870	877	887
9	881	880	887	887	892	884	874	870	861	865	869	877	874	875	885	888
10	886	887	887	890	888	890	880	874	883	897	900	900	897	880	881	880
11	875	875	871	871	872	871	873	860	866	866	872	885	891	896	899	897
12	891	888	890	886	878	876	870	864	862	865	880	884	886	893	895	897
13	884	882	881	875	878	871	868	860	858	860	861	870	873	873	871	876
14	868	872	873	878	879	868	855	851	851	855	864	875	879	882	887	886
15	877	878	878	878	879	874	862	854	857	858	870	876	886	897	904	907
16	900	900	901	900	903	898	888	881	866	866	882	900	903	927	929	929
17	882	883	874	863	870	847	851	833	808	837	831	844	836	816	822	845
18	876	879	878	860	857	854	837	830	827	835	855	879	898	902	898	888
19	865	897	877	868	861	857	844	830	835	826	851	883	890	884	880	879
20	882	899	879	876	874	870	868	856	843	818	834	864	870	871	876	888
21	888	871	865	870	867	862	855	851	850	860	869	873	886	879	877	870
22	880	882	880	876	873	874	860	853	853	853	873	887	881	890	898	893
23	873	871	876	867	865	860	842	848	857	862	875	887	881	881	880	877
24	869	871	865	868	856	860	857	841	840	845	851	855	857	861	881	885
25	873	868	871	867	869	865	865	856	847	843	850	849	868	883	889	882
26	880	882	880	880	882	881	874	862	850	859	862	866	867	883	886	887
27	887	884	883	877	877	873	867	858	860	859	856	852	870	881	870	870
28	865	869	869	869	876	875	874	866	855	853	855	874	893	892	876	822
29	859	864	857	851	857	855	854	843	849	849	849	851	867	875	873	879
30	879	877	875	882	883	877	870	866	861	853	853	864	876	876	869	881
31	878	876	880	878	880	871	867	866	862	868	870	884	888	891	885	884
Mean	877.1	877.8	876.6	874.6	875.0	870.8	861.0	856.3	853.3	857.0	864.4	874.0	879.1	881.9	882.0	880.6

JULY, 1898.

5p	6p	7p	8p	9p	10p	11p	M.N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
850	850	843	841	842	841	843	848	835.7	850	2.18 p	812	7.00 a	38	A
846	849	844	840	838	841	833	837	845.4	868	2.00 p	823	6.34 a	45	A
864	863	859	843	855	850	855	857	847.1	873	Noon	820	8.00 a	53	A
857	857	852	...	...	...	...	...	...	...	...	...	...	...	A
847	846	843	848	852	848	845	848	...	...	...	...	...	...	A
841	838	833	847	848	844	847	853	840.2	853	M.N.	**811**	8.50 a	42	A
845	833	836	838	842	843	846	835	840.6	859	5.10 a	812	8.24 a	47	A
858	853	852	848	857	842	843	841	848.1	866	3.00 p	828	8.10 a	38	A
864	845	848	838	844	841	839	839	850.0	870	2.10 p	832	6.32 p	38	A
859	854	845	846	847	852	850	851	851.8	872	2.00 p	840	7–8 a	32	C
876	864	856	851	855	853	850	844	856.6	881	2.00 p	830	8.00 a	51	C
871	871	874	868	856	854	861	858	860.1	881	2.00 p	843	1.00 a	38	A
858	855	852	847	844	838	856	861	856.7	869	8.15 a	837	8.45 p	32	A
855	852	848	849	849	849	851	848	851.3	863	10.51 a	844	1.00 a	19	C
849	851	849	846	849	857	859	864	849.5	864	M.N.	839	7.30 a	25	C
860	859	862	866	865	870	866	863	...	878	1.35 p	837	5.40 p	41	C
852	847	849	856	860	860	860	866	855.8	878	2.03 p	838	8.00 a	40	A
863	864	869	872	872	872	872	872	861.9	876	3.00 p	844	7–9 a	32	C
879	875	880	884	885	884	882	875	872.5	889	3.00 p	835	7.30 a	54	C
851	856	846	848	856	856	856	856	859.9	899	Noon	809	2.38 p	90	S˙
...	...	...	...	...	...	...	...	...	...	...	...	...	...	A
849	857	840	857	856	868	869	870	856.9	878	Noon	832	2.20 p	46	A a.m., S˙ p.m.
837	836	856	865	852	862	858	856	857.4	876	3.00 a	836	5.40 p	40	S˙
856	844	838	830	847	850	849	845	849.9	864	4.00 p	830	8.00 p	34	A
873	855	846	848	847	855	867	857	856.2	877	2.00 p	842	7.00 a	35	A a.m., S˙ p.m.
864	861	862	865	867	870	869	872	856.5	880	0.50 a	830	7.30 a	50	A
893	891	889	890	884	880	883	878	877.5	897	4.00 p	862	Noon	35	A
890	889	881	877	881	864	875	877	872.7	910	1.43 a	849	9.00 a	61	S˙ a.m., A p.m.
883	876	879	874	874	865	869	866	874.0	891	3.24 p	865	10.00 p	26	C
883	876	879	880	884	886	885	884	876.8	900	1.00 p	848	6.30 a	52	C
883	887	884	880	872	891	883	883	881.4	**915**	2.57 a	855	8.20 a	60	A
862.7	859.0	856.9	856.6	857.9	858.1	859.6	859.0	857.1	910.3		866.0		44.3	

AUGUST, 1898.

5p	6p	7p	8p	9p	10p	11p	M.N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
881	879	879	879	874	873	872	875	882.0	902	Noon	859	8.20 a	43	A a.m., C p.m.
878	876	872	847	863	867	866	870	877.4	894	6.00 a	838	7.41 p	56	A
852	843	856	863	851	852	859	866	860.0	877	3.00 a	834	6.24 p	43	A
862	866	873	869	870	872	873	877	865.4	890	11.50 a	838	9.30 a	52	A
869	859	861	859	857	880	858	876	869.3	888	1.00 p	853	9.00 a	35	A
877	872	867	863	865	878	869	875	873.7	904	1.22 p	846	9.00 a	58	A
886	881	873	872	867	879	878	875	874.7	895	3.00 p	843	8.15 a	52	A
881	880	877	872	869	875	878	882	868.8	888	4.25 p	841	11.25 a	47	A
891	886	882	878	880	885	883	884	879.9	896	4.24 a	860	8.36 a	36	C
883	879	873	871	866	869	873	873	882.8	909	11.30 a	866	9.00 p	34	C
897	894	898	899	895	893	891	893	883.3	906	6.18 p	860	8.00 a	46	C
898	899	894	894	892	890	890	889	885.5	906	4.55 p	862	9.50 a	44	C
878	878	877	867	867	860	858	863	870.4	890	1.42 a	858	9.00 a	32	C
887	887	882	882	881	882	878	876	874.1	887	3.00 p	843	8.10 a	44	C
908	899	902	904	903	908	901	903	886.0	910	3.45 p	854	8.00 a	56	C
914	910	918	924	910	908	914	922	903.9	**929**	3.12 p	865	9.51 a	64	A
857	868	865	869	867	872	868	873	853.4	903	0.01 a	**812**	2.21 p	91	A
874	875	864	880	875	879	880	872	868.8	902	2.09 p	825	8.33 a	77	A
881	885	879	886	880	879	879	883	870.0	902	1.27 a	821	9.45 a	81	A
879	879	884	877	881	882	875	887	870.5	901	0.42 a	815	10, 10a	86	A
882	877	882	881	881	880	885	882	872.6	890	2.37 p	860	9.57 a	30	A
891	877	874	877	880	881	876	873	876.5	898	3.09 p	843	9.20 a	55	A
869	861	855	866	864	867	861	868	867.2	894	0.59 p	842	7.00 a	52	A
882	876	875	874	872	874	873	876	865.2	885	4.20 p	837	8.10 a	48	A
886	885	890	880	880	879	881	880	871.1	890	7.00 p	837	9.16 a	53	C
886	883	885	886	887	887	876	876	877.0	890	4.30 p	848	9.24 a	42	C
863	864	853	866	874	875	868	893	870.4	893	M.N.	852	Noon	41	A
836	860	858	885	874	856	857	858	865.3	893	1.00 p	820	4.02 p	73	A
884	880	880	880	875	886	873	878	865.3	897	3.28 p	840	9.42 a	57	A
880	878	874	875	870	873	875	878	872.7	883	5, 10 a	848	10.13 a	35	C
876	874	881	879	880	882	880	884	877.7	895	2.40 p	862	9.00 a	33	C
879.6	877.7	877.2	877.5	875.8	878.2	875.7	879.4	873.6	896.1		844.6		51.5	

HORIZONTAL INTENSITY: 0.29 . . . C. G. S.

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
1	886	894	900	894	885	886	880	872	873	874	877	891	896	897	886	875
2	882	882	881	876	881	878	863	847	840	847	860	879	881	885	882	867
3	873	881	880	885	887	890	880	841	824	811	825	841	802	816	827	815
4	847	846	850	851	851	851	842	830	829	836	850	858	869	877	881	879
5	870	871	868	874	873	868	863	857	838	839	865	878	891	893	891	890
6	876	881	880	876	875	874	875	869	862	860	857	868	873	879	882	882
7	880	880	880	875	874	869	858	847	844	853	865	862	880	886	887	889
8	872	870	874	874	873	873	875	867	861	856	870	889	885	889	889	889
9	888	882	872	864	862	866	870	847	849	852	865	875	875	882	880	877
10	771	778	774	766	909	689	688	687	...	...	...	713	735	748	771	760
11	805	787	773	776	791	788	774	774	768	760	755	777	787	776	776	772
12	804	803	807	810	827	813	805	791	786	783	776	802	816	824	821	814
13	813	815	814	815	825	824	817	803	799	796	803	818	824	838	844	844
14	832	835	836	834	833	821	808	798	813	829	834	838	840	846	850	845
15	812	812	816	830	819	819	824	821	814	816	823	839	851	865	862	854
16	844	850	851	847	844	837	830	817	822	831	852	866	866	867	863	857
17	854	849	848	846	848	847	841	839	840	840	845	...	...	...	881	873
18	856	857	855	852	853	850	831	828	829	817	831	850	864	865	861	845
19	854	847	848	850	851	855	848	840	827	828	828	847	855	859	854	850
20	853	850	846	849	849	846	844	836	834	835	844	856	865	867	869	875
21	854	851	859	860	856	867	857	857	846	838	839	854	863	864	865	852
22	849	847	846	844	842	840	842	835	836	834	842	846	850	857	858	856
23	862	862	867	861	862	865	877	851	851	850	865	873	872	872	859	855
24	860	860	860	864	852	857	849	847	845	854	869	881	880	878	864	864
25	839	851	859	855	850	846	845	842	840	838	835	855	855	859	852	842
26	853	853	854	854	852	856	848	841	841	847	856	865	873	873	873	861
27	865	862	862	865	864	862	863	864	857	859	869	877	870	877	875	866
28	879	881	874	871	871	865	864	866	859	865	879	892	895	887	869	855
29	841	851	847	859	852	843	831	827	865	852	871	861	872	880	842	830
30	849	838	838	838	842	843	843	838	836	842	843	845	858	840	847	853
Mean	853.5	853.5	853.5	853.7	853.4	851.9	846.4	837.6	835.3	835.8	844.6	856.5	861.0	864.2	861.0	855.5

HORIZONTAL INTENSITY: 0.29 . . . C. G. S.

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
1	862	863	871	865	861	852	847	837	820	828	844	851	856	846	847	836
2	849	845	856	850	842	840	832	829	832	838	841	845	862	867	865	858
3	844	851	849	844	851	850	843	837	832	833	846	849	855	865	867	860
4	851	849	849	839	847	844	841	832	830	830	841	851	861	868	864	861
5	869	869	867	870	870	870	868	861	858	859	854	864	869	877	879	877
6	862	862	863	860	862	863	866	860	845	836	842	847	862	870	880	876
7	870	868	863	864	866	872	875	868	869	869	871	874	878	887	887	885
8	865	859	858	853	862	857	868	862	860	848	849	855	868	874	873	871
9	866	865	861	863	867	869	865	863	860	863	866	869	872	877	874	871
10	859	862	862	860	859	860	861	854	854	857	861	867	873	881	876	869
11	852	853	849	853	850	848	843	839	844	862	870	872	870	876	877	872
12	862	862	858	860	861	862	859	851	856	865	873	879	876	881	878	877
13	861	850	864	854	856	859	859	854	853	862	872	882	885	890	891	887
14	867	871	867	861	857	857	858	850	853	853	853	867	876	878	879	863
15	854	858	861	863	863	866	869	863	865	870	876	887	893	886	881	877
16	873	871	873	875	879	866	869	860	860	865	872	884	885	891	893	889
17	868	869	871	866	867	865	859	853	851	853	864	877	887	895	887	879
18	868	867	868	865	867	864	861	861	849	845	849	876	876	882	883	881
19	870	867	870	868	867	864	861	850	849	845	847	860	876	887	892	886
20	872	872	876	873	867	872	868	865	857	857	847	860	879	883	864	858
21	845	848	846	849	848	840	848	846	847	860	864	868	871	873	866	859
22	870	872	878	875	877	877	882	879	879	864	865	876	879	870	866	863
23	893	888	868	869	876	870	873	869	853	859	859	862	882	888	888	886
24	873	869	872	870	871	869	868	860	860	859	858	868	879	879	883	885
25	876	872	874	877	882	890	890	879	872	871	874	875	869	877	879	885
26	869	869	857	867	866	877	868	851	845	851	850	851	863	857	856	854
27	863	855	857	857	860	862	857	850	855	849	844	864	871	879	870	871
28	882	869	881	874	866	864	858	852	844	840	855	865	869	881	879	880
29	858	853	856	854	852	850	852	832	855	843	846	850	854	848	865	842
30	841	879	896	879	875	845	843	844	836	839	842	847	846	847	845	847
31	857	863	865	883	865	864	855	843	837	822	829	832	833	848	853	868
Mean	863.6	863.5	864.7	863.2	863.2	861.9	860.2	853.3	851.0	851.4	855.6	863.7	870.2	874.4	873.8	870.1

SEPTEMBER, 1898.

5p	6p	7p	8p	9p	10p	11p	M. N.	Mean	Maximum	h m	Minimum	h m	Range	Remarks
864	867	867	869	872	871	878	879	880.5	900	3.00 a	863	4.58 p	37	A
862	868	864	867	871	877	864	865	869.5	899	5.33 a	840	8.31 a	59	A
830	825	840	844	844	855	853	879	847.8	904	6.11 a	802	1.00 p	102	S'
872	856	861	861	863	868	868	861	856.5	897	3.36 p	829	9.00 a	68	A
891	885	879	873	874	876	885	885	874.0	893	2.00 p	832	8.54 a	61	A
877	876	873	873	875	877	879	870	873.7	905	2.58 p	857	11.00 a	48	C
882	871	872	876	871	870	880	874	871.9	889	4.00 p	844	9.00 a	45	C
879	884	888	891	886	874	880	885	878.0	906	4.23 p	856	10.00 a	50	C a.m., A p.m.
877	879	878	885	882	914	887	866	873.9	**942**	10.15 p	847	8.00 a	95	A
...	...	716	717	732	794	754	766	...	...	...	...	...	...	S²
794	805	814	809	809	804	804	802	786.7	814	7.00 p	**775**	11.00 a	39	A
812	810	810	813	813	817	812	812	807.5	824	2.00 p	776	10.37 a	48	C
839	829	845	825	844	834	831	830	823.7	845	7.00 p	796	10.00 a	49	A
838	835	835	827	820	820	809	812	828.7	850	3.00 p	808	7.30 a	42	A
835	836	842	840	846	844	843	850	833.9	865	2.00 p	812	1.00 a	53	A
847	852	850	852	852	852	852	850	848.0	886	1.57 p	817	8.00 a	69	A
874	869	869	868	867	859	859	858	...	...	...	...	...	...	A
856	852	847	849	853	852	848	851	848.0	865	2.00 p	817	10.00 a	48	A
847	851	849	845	847	847	846	845	846.6	880	1.48 p	828	10.00 a	52	C
869	871	867	862	858	860	859	858	855.1	875	4.00 p	834	9.00 a	41	C
850	851	853	851	839	850	853	851	853.3	867	6.19 a	838	10.00 a	29	C
853	854	855	856	859	863	862	858	849.3	863	10.00 p	834	10.00 a	29	C
848	838	851	843	848	854	859	859	858.2	873	Noon	820	5.24 p	53	A
860	850	840	838	856	863	857	848	858.2	885	0.33 p	840	7.00 p	45	A
836	835	843	834	843	834	843	851	845.1	862	1.15 p	832	9.39 p	30	A
857	855	856	860	863	860	860	864	857.3	873	1.13 p	841	8.00 a	32	A
866	869	870	870	870	875	862	877	867.3	880	1.33 p	857	9.00 a	23	C
845	841	838	842	846	844	844	846	863.2	899	0.24 p	838	7.00 p	61	A
811	827	801	784	815	831	832	860	841.1	891	0.43 p	784	8.00 p	107	S'
856	857	851	855	857	865	869	865	848.7	869	11.00 p	836	9.00 a	32	A
851.9	851.0	851.4	849.5	852.7	855.4	854.2	855.5	851.6	878.6		826.9		51.7	

OCTOBER, 1898.

5p	6p	7p	8p	9p	10p	11p	M. N.	Mean	Maximum	h m	Minimum	h m	Range	Remarks
829	826	854	852	854	851	851	852	848.1	872	2.54 a	816	9.30 a	56	A
854	853	850	852	848	845	844	849	847.7	867	2.00 p	829	8.00 a	38	C
853	849	845	847	850	858	854	854	849.4	867	3.13 p	832	9.00 a	35	C
864	861	860	860	859	857	859	864	851.7	868	2.00 p	827	9.40 a	41	C
871	868	863	862	862	862	862	864	866.5	879	3.00 p	849	1.06 a	30	C
872	869	878	875	874	868	878	871	864.2	878	11.00 p	834	10.25 a	44	C a.m., A p.m.
877	879	871	866	860	858	865	860	870.9	887	2.00 p	852	9.30 p	35	A
867	867	864	860	860	862	865	867	862.7	874	2.00 p	848	10.00 a	26	C
861	863	861	859	871	860	855	855	864.8	877	2.03 p	855	10.40 a	22	C a.m., A p.m.
863	865	867	860	852	850	851	853	861.5	881	2.00 p	834	10.42 p	47	C a.m., A p.m.
869	869	871	870	867	866	863	862	861.1	877	3.00 p	831	7.38 a	46	A
877	875	875	871	871	867	870	867	868.0	881	2.00 p	851	8.00 a	30	A
880	877	874	874	872	875	872	873	869.8	891	3.00 p	853	8.50 a	38	A
864	864	864	864	862	855	856	854	862.2	879	3.10 p	850	8.00 a	29	A
874	877	874	873	875	875	873	869	871.7	893	1.00 p	854	1.00 a	39	A
884	881	879	877	875	877	874	869	875.9	893	3.00 p	852	9.30 a	41	A
873	873	871	867	868	869	869	868	869.5	895	2.00 p	851	9.00 a	44	A
878	875	875	874	875	873	869	865	868.6	883	3.00 p	845	1.00 a	38	C
885	883	876	877	876	875	875	873	870.0	892	3.05 p	845	10.00 a	47	C
849	843	832	826	794	820	835	847	854.8	886	1.48 p	**794**	9.00 p	92	A a.m., S' p.m.
855	857	857	861	870	868	867	868	857.5	873	2.00 p	840	6.20 a	33	A
861	863	857	855	880	878	854	869	870.4	887	8.58 p	852	5.27 p	35	A
883	880	880	881	878	870	880	871	875.2	902	0.30 a	853	9.10 a	49	A
885	881	883	885	881	883	881	885	874.5	885	4.00 p	854	11.48 a	31	C
877	859	858	863	834	819	835	857	868.5	890	6.27 a	811	9.21 p	79	A a.m., S' p.m.
848	857	859	865	861	859	868	878	860.0	884	0.35 a	845	9.00 a	39	A
863	870	862	868	872	873	871	872	863.1	879	2.00 p	844	11.00 a	35	A
874	861	866	868	864	854	864	859	865.4	888	11.59 p	840	10.00 a	48	A
832	807	805	826	829	839	855	846	843.7	865	3.00 p	804	6.18 p	61	S'
843	841	844	843	855	847	853	844	850.9	**912**	2.43 a	836	6.43 a	76	S' a.m., A p.m.
833	841	844	843	848	858	861	859	850.2	883	4.00 a	822	10.00 a	61	S' a.m., C p.m.
864.4	862.4	861.9	862.1	861.2	860.3	86.22	862.5	862.5	882.8		838.8		44.0	

HORIZONTAL INTENSITY: 0.29 . . . C. G. S.

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
1	861	860	862	860	858	856	853	848	840	836	851	863	861	870	869	860
2	859	861	852	849	851	848	839	835	847	847	859	866	879	877	868	868
3	868	869	871	869	863	869	874	869	858	859	855	858	868	873	870	861
4	875	874	875	869	866	867	871	865	865	852	852	862	867	873	873	871
5	868	867	865	866	866	861	854	848	843	848	850	857	863	865	871	873
6	865	864	866	864	861	865	869	875	873	875	877	879	882	884	888	893
7	873	872	877	874	871	871	865	860	851	858	866	878	884	882	882	877
8	866	887	864	867	867	867	870	866	870	872	878	892	893	892	890	878
9	877	879	885	886	886	895	886	871	866	868	871	875	880	877	878	877
10	861	860	864	865	865	870	867	859	855	857	864	869	875	874	875	873
11	876	875	873	873	875	876	878	874	869	869	870	874	878	881	879	888
12	868	872	879	876	873	876	871	860	854	867	876	887	882	881	889	891
13	876	874	874	871	874	876	871	871	873	872	871	882	884	888	886	884
14	881	880	878	875	875	874	872	870	867	872	876	885	886	886	887	890
15	888	890	889	888	890	892	892	885	881	883	888	894	892	895	900	890
16	879	876	876	880	879	883	879	883	880	885	896	902	907	906	907	899
17	877	881	879	877	876	875	877	870	877	874	873	882	888	887	877	863
18	868	874	865	856	860	856	870	868	855	850	853	851	865	867	873	872
19	862	852	852	855	858	860	859	849	842	837	846	855	863	865	868	864
20	871	871	876	877	874	870	861	...	...	...	...	...	...	...	...	...
21	...	...	...	...	...	...	...	...	...	...	...	...	...	851	853	860
22	855	848	849	847	867	853	848	837	857	842	835	841	849	854	856	851
23	819	834	818	814	816	817	821	825	829	829	832	833	827	829	823	818
24	830	831	830	832	830	832	831	829	821	820	827	834	838	846	847	852
25	851	853	849	843	842	841	846	840	841	838	842	841	845	849	853	848
26	847	844	847	847	853	851	855	856	859	856	859	861	859	857	852	853
27	846	853	848	855	850	848	851	858	853	842	842	860	864	867	868	870
28	838	855	844	838	844	844	853	861	863	852	854	847	853	868	869	860
29	842	842	847	845	847	848	854	850	847	845	850	851	865	864	854	850
30	857	853	861	861	864	867	868	870	873	876	872	883	882	882	882	877
Mean	861.9	863.6	862.1	860.8	861.7	862.1	862.3	859.7	857.5	856.5	860.2	866.5	870.7	872.8	872.6	869.7

HORIZONTAL INTENSITY: 0.29 . . . C. G. S.

1	859	864	865	867	866	880	883	883	865	852	852	859	863	868	870	874
2	863	868	867	865	863	865	871	873	871	860	865	866	863	861	875	875
3	868	867	865	866	864	863	872	876	870	868	862	865	867	874	878	875
4	867	860	862	861	866	861	863	873	876	872	864	865	861	863	860	863
5	845	848	848	851	850	851	851	853	852	869	871	874	876	877	877	874
6	862	864	872	859	848	896	867	854	858	854	852	867	869	872	874	874
7	869	879	876	875	870	859	866	862	851	846	847	851	862	862	857	853
8	843	848	842	843	837	838	842	840	837	834	831	841	844	851	857	853
9	844	845	845	850	853	847	852	853	839	833	836	841	849	853	842	857
10	854	853	854	854	852	850	848	852	846	842	841	842	843	847	853	854
11	846	840	838	841	841	844	843	837	828	825	824	832	840	851	864	864
12	851	857	852	852	857	860	862	856	855	852	845	843	846	860	865	867
13	858	856	858	859	854	855	853	849	847	845	844	845	852	855	863	864
14	863	861	859	857	857	859	855	856	846	862	862	859	849	841	829	803
15	817	838	839	844	833	831	821	829	824	833	833	838	834	833	837	842
16	833	833	832	836	831	823	828	826	811	806	810	811	818	828	834	831
17	829	829	837	848	840	833	828	843	822	811	811	804	811	821	827	830
18	820	819	822	819	819	819	817	812	808	805	811	822	832	844	850	855
19	834	828	830	835	842	846	845	830	824	820	820	813	814	837	841	842
20	835	838	852	841	824	825	827	814	812	805	810	817	822	825	835	833
21	824	821	818	821	823	814	812	800	785	781	787	798	805	816	826	821
22	822	819	821	813	818	821	819	819	808	801	802	800	812	815	816	816
23	799	802	802	803	806	803	803	803	793	794	787	789	791	799	806	814
24	808	809	811	807	807	807	812	813	809	801	802	802	807	806	812	823
25	815	814	814	814	817	819	825	827	819	812	814	814	816	832	836	832
26	823	821	824	826	824	828	833	840	835	829	825	824	826	827	833	832
27	839	837	836	837	838	840	844	847	843	837	838	841	831	835	835	833
28	836	843	831	835	836	829	831	828	823	824	818	813	815	821	833	829
29	827	822	816	823	826	828	833	837	831	825	831	839	841	847	843	843
30	823	822	830	826	829	830	833	832	829	824	829	834	837	840	835	838
31	824	825	820	818	822	823	828	834	832	828	838	838	838	833	831	832
Mean	838.7	839.7	839.9	840.2	839.1	840.2	840.9	840.3	833.8	830.6	831.0	833.8	836.6	841.7	845.0	845.0

NOVEMBER, 1898.

5p	6p	7p	8p	9p	10p	11p	M. N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
857	858	862	857	860	862	860	854	857.4	870	2.00 p	836	10.00 a	34	C
868	866	866	866	865	866	870	870	860.1	878	1.00 p	835	8.00 a	44	C
852	861	857	860	860	865	871	873	864.7	878	1.06 p	852	11.18 a	26	A
865	862	864	864	864	873	873	874	867.3	877	0.10 a	840	10.50 a	37	C
868	868	864	861	868	867	865	864	862.1	868	1.00 a	825	11.25 a	43	C
884	882	880	878	877	876	872	872	875.0	893	4.00 p	861	5.00 a	32	C
875	875	873	871	875	875	876	864	871.9	886	6.30 a	851	9.00 a	35	A
869	865	869	872	866	868	875	877	874.2	893	1.00 p	850	0.35 a	43	A
874	876	867	866	862	868	876	863	875.4	895	6.00 a	862	9.00 p	33	A
866	869	868	872	872	872	873	874	867.5	877	0.40 p	855	9.00 a	22	C
886	880	871	867	869	871	866	863	874.2	888	4.00 p	863	M.N.	25	C
891	888	880	880	879	872	876	879	877.0	891	4-5 p	860	8.00 a	31	A
880	881	882	879	881	884	883	881	878.2	888	2.00 p	871	8.00 a	17	C
888	889	889	891	889	891	892	890	882.2	897	2.12 a	867	9.00 a	30	C
888	888	886	878	879	885	883	882	887.7	900	3.00 p	878	8.00 p	22	C a.m., A p.m.
890	886	884	885	881	884	879	876	886.7	**909**	1.15 p	874	2.15 a	35	A
869	856	843	829	843	853	850	850	867.9	888	1.00 p	826	7.24 p	62	A
859	839	817	816	831	839	849	856	854.5	874	2.00 a	813	6.33 p	61	S'
860	860	865	877	876	873	874	872	860.2	877	8.00 p	837	10.00 a	40	C
...	...	...	...	...	...	...	...	...	...	...	...	...	...	
838	835	834	839	835	859	853	856	...	...	...	...	..	...	S' p.m.
851	851	834	845	815	802	798	849	843.9	867	5.00 a	**790**	10.24 p	77	S'
827	812	824	814	833	827	827	825	823.9	857	9.07 p	812	6.00 p	45	A
850	851	847	847	848	848	852	849	838 4	852	4.00 p	816	9.24 a	36	C
844	848	845	846	852	849	853	848	846.1	853	3.00 p	838	10.00 a	15	C
854	847	846	845	837	840	841	870	851.5	870	M.N.	834	9.07 p	36	A
854	848	857	859	855	850	850	849	854.0	870	4.00 p	842	10.11 a	28	A
859	853	850	851	846	846	846	846	851.7	869	3.00 p	838	4.00 a	31	A
853	852	837	847	856	858	854	856	850.6	865	1.00 p	837	7.00 p	28	C
865	860	861	856	863	863	863	864	867.6	883	Noon	853	2.00 a	30	C
865.9	863.2	860.3	860.0	860.8	861.7	862.4	863.9	863.3	879.1		843.4		35.7	

DECEMBER, 1898.

5p	6p	7p	8p	9p	10p	11p	M. N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
872	869	868	869	867	868	868	869	867.5	884	8.20 a	850	11.33 a	34	C
866	861	859	859	856	861	864	860	864.9	880	3.30 p	856	9.00 p	24	C
870	872	874	871	866	869	870	871	869.3	878	3.00 p	863	6.00 a	15	C
860	859	855	858	852	848	853	846	861.2	876	9.00 a	846	M.N.	30	A a.m., C p.m.
869	862	862	858	856	860	860	858	860.5	877	2.30 p	844	0.51 a	33	A
874	869	862	864	866	862	864	865	865.3	**900**	5.40 a	852	11.00 a	48	S' a.m., A p.m.
855	835	836	844	844	856	863	850	857.0	879	2.00 a	834	5.48 p	45	A
854	854	855	853	852	849	850	848	845.7	857	2.58 p	831	11.00 a	26	C
859	859	855	850	840	850	855	859	848.6	859	5-6 p	833	10.00 a	26	A
850	846	844	843	841	843	843	841	847.3	860	3.10 a	834	9.27 p	26	C
866	866	864	854	852	850	848	849	846.1	866	5-6 p	822	10.24 a	44	C a.m., A p.m.
868	867	865	861	865	868	862	863	858.3	868	5.00 p	845	11.00 a	23	A
868	869	867	864	864	863	865	863	857.7	869	6.00 p	839	10.24 a	30	C
798	800	799	803	802	789	798	820	834.5	863	1.36 a	789	10.00 p	74	C a.m., A p.m.
837	827	835	826	843	826	821	830	832.1	844	4.00 a	814	0.49 a	30	A
823	830	835	834	825	813	830	835	825.7	836	4.00 a	806	10.00 a	30	A
827	822	823	820	822	829	816	820	825.1	848	4.00 a	804	Noon	44	A
844	842	844	833	838	826	830	827	827.4	855	4.00 p	805	10.00 a	50	C a.m., A p.m.
835	830	826	824	830	833	838	845	831.7	847	6.54 a	813	Noon	34	A
827	821	816	821	823	819	837	821	825.0	852	3.00 a	805	10.00 a	47	A
823	818	822	829	825	820	821	822	813.8	832	3.05 p	**781**	9.42 a	51	A
808	806	804	798	804	804	803	800	810.4	825	7.24 a	798	8.00 p	27	A
816	814	812	808	811	809	804	800	802.8	816	5.00 p	787	11.00 a	29	C
821	814	810	804	812	816	813	814	810.0	823	4.05 p	801	10.00 a	22	C
826	820	820	819	823	828	825	824	821.0	836	3.00 p	812	10.00 a	24	A
833	835	835	835	834	834	833	835	830.2	840	8.07 a	821	1.05 a	19	C
838	839	833	828	832	825	825	829	835.8	847	8.00 a	820	8.55 p	27	C a.m., A p.m.
819	815	805	813	812	817	821	815	823.4	843	2.00 a	804	6.52 p	39	A
836	837	833	826	827	829	826	823	831.2	847	2.00 p	816	3.10 a	31	A
838	838	834	832	828	825	829	832	831.1	840	2.00 p	820	1.50 a	20	C a.m., A p.m.
825	824	820	818	833	834	838	838	828.9	838	11.00 a	817	6.50 p	21	C
842.1	839.4	837.8	836.1	836.9	836.2	837.8	837.8	838.4	854.4		821.4		33.0	

VERTICAL INTENSITY: 0.34 . . . C. G. S.

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
1	372	370	373	366	375	373	371	372	366	360	359	366	372	379	371	372
2	379	378	373	372	374	372	381	377	367	358	357	374	372	378	380	373
3	370	372	374	381	379	377	375	371	352	353	362	368	368	368	368	368
4	372	371	372	376	376	374	381	375	365	357	358	359	361	369	368	371
5	374	374	372	370	370	372	377	372	361	356	358	365	366	370	375	376
6	374	370	369	371	370	369	371	362	350	342	345	349	359	364	369	366
7	365	366	365	361	361	362	366	365	357	351	353	345	357	364	366	366
8	362	364	361	360	364	361	364	364	353	351	354	357	364	367	368	365
9	364	362	363	364	364	363	362	359	359	355	357	362	367	373	368	363
10	360	360	364	367	366	361	357	357	351	348	355	361	373	378	368	360
11	364	362	363	364	373	371	374	373	372	371	371	366	364	367	367	363
12	374	372	372	372	374	374	375	375	369	366	365	372	374	375	372	366
13	369	367	365	363	365	366	365	365	360	360	363	362	368	369	376	371
14	374	374	374	374	373	376	379	379	369	369	372	382	380	383	381	379
15	381	378	375	376	378	380	378	374	365	367	375	375	375	375	375	374
16	378	382	377	369	370	378	379	375	362	362	362	380	378	383	382	376
17	385	386	377	377	373	375	385	380	377	371	375	372	379	385	386	382
18	391	386	385	381	374	383	381	373	372	365	366	368	377	386	389	388
19	384	373	378	381	373	373	381	372	367	361	358	359	369	379	392	392
20	394	382	385	383	385	381	384	382	372	370	375	374	378	379	379	381
21	382	385	386	387	391	385	385	385	371	371	372	374	373	380	381	382
22	386	389	394	389	387	391	394	392	387	378	375	376	381	376	368	364
23	378	381	382	382	383	384	390	390	390	371	371	372	373	375	375	370
24	381	379	380	384	385	382	386	389	384	379	378	382	382	382	383	380
25	386	389	386	388	390	390	392	391	384	385	379	382	385	390	385	381
26	393	393	393	389	391	391	392	387	380	378	375	375	375	378	377	369
27	382	380	381	382	385	385	385	380	371	369	374	377	380	382	380	375
28	378	384	381	387	384	382	381	377	372	371	373	375	381	378	372	369
29	389	391	390	389	388	388	386	386	382	384	386	392	392	392	390	386
30	389	392	391	390	387	389	387	384	375	371	370	375	379	384	388	386
31	388	394	395	393	395	392	387	382	370	361	371	377	382	389	394	386
Mean	378.0	377.6	377.3	377.0	377.5	377.5	379.1	376.3	368.5	364.9	366.9	370.1	373.7	377.3	377.2	374.2

VERTICAL INTENSITY: 0.34 . . . C. G. S.

1	391	391	395	394	391	393	393	395	388	382	380	380	389	391	398	396
2	389	388	393	393	387	384	389	385	384	371	370	375	379	384	390	389
3	383	387	387	390	388	385	385	383	379	377	380	385	385	389	388	388
4	386	384	389	391	394	398	397	400	392	391	386	379	381	387	391	390
5	394	391	391	391	393	393	394	398	396	391	381	381	382	388	385	380
6	385	392	388	387	389	398	398	395	390	384	376	368	373	377	379	377
7	397	398	397	394	395	393	395	393	390	383	387	387	386	388	389	389
8	390	390	396	395	392	391	392	393	384	381	385	389	394	394	395	395
9	392	390	387	398	389	386	388	385	375	372	372	375	368	366	371	373
10	389	390	384	386	385	387	385	381	379	376	376	383	390	387	388	384
11	380	381	380	380	380	381	379	373	372	372	369	366	360	364	366	371
12	385	377	389	377	379	382	377	373	371	364	366	359	376	379	380	378
13	383	380	383	380	383	379	392	383	379	379	376	379	372	378	383	383
14	388	382	382	381	383	385	384	380	375	376	359	370	378	387	394	386
15	394	387	384	379	380	381	378	384	381	386	393	383	389	392	391	394
16	393	395	397	395	396	394	398	405	400	398	400	400	394	399	395	398
17	404	400	400	402	405	410	411	407	405	403	394	376	382	388	391	391
18	407	394	393	393	393	394	392	388	389	390	391	393	387	387	386	384
19	399	399	399	390	398	393	398	384	380	380	371	371	387	383	399	404
20	393	395	394	397	395	386	401	393	390	388	383	382	379	385	389	386
21	381	386	381	377	372	374	379	381	377	372	371	373	370	374	382	385
22	389	388	388	381	380	388	387	388	385	377	374	372	378	381	380	379
23	382	382	381	384	382	384	384	377	374	377	374	374	375	379	387	393
24	383	382	382	381	381	378	378	379	376	370	355	344	353	363	373	382
25	372	376	371	373	367	365	367	363	357	356	352	349	359	...	...	...
26	377	374	372	371	373	371	376	381	364	353	356	358	377	389	393	394
27	389	389	386	386	382	382	387	385	377	382	381	370	373	377	386	391
28	376	374	375	371	367	371	375	376	368	373	370	372	374	384	391	389
Mean	388.5	387.3	387.6	386.9	386.0	387.1	388.2	386.5	382.2	379.6	377.3	375.7	379.0	383.3	386.7	387.0

JANUARY, 1898.

5p	6p	7p	8p	9p	10p	11p	M.N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
374	381	384	381	381	379	380	382	373.3	386	7.30 p	359	11.00 a	27	A
371	372	372	377	375	373	367	365	372.4	381	7.00 a	354	6.20 a	27	C
368	368	369	371	371	375	374	372	369.7	381	4.00 a	352	9.00 a	29	C
374	374	374	374	374	374	368	372	370.0	381	7.00 a	357	10.00 a	24	C
375	375	376	375	376	371	372	374	370.9	377	7.00 a	356	10.00 a	21	C
370	369	371	371	372	371	371	369	365.2	374	1.00 a	**342**	10.00 a	32	C
365	365	364	368	368	359	365	365	362.5	369	10.00 p	345	Noon	24	C
366	369	368	367	367	366	366	366	363.1	369	6.00 p	351	10.00 a	18	C
366	368	371	370	370	369	369	366	365.2	373	2.00 p	355	10.00 a	18	C
357	357	356	361	359	352	361	359	360.7	378	2.00 p	348	10.00 a	30	C
358	363	363	370	378	379	379	374	368.7	379	10–11p	358	5.00 p	21	C
362	364	368	370	369	372	374	374	370.9	376	7.40 a	362	5.00 p	14	C
369	374	374	374	375	378	381	379	373.2	381	11.00 p	360	9–10 a	21	C
378	380	381	378	378	374	379	378	376.8	383	2.00 p	369	9–10 a	14	C
375	373	373	378	378	378	380	382	375.7	382	M.N.	365	9.00 a	17	C
364	365	382	377	382	379	386	385	376.0	386	11.00 p	361	9.35 a	25	A
383	381	383	388	390	402	388	385	377.7	**402**	10.00 p	371	10.00 a	31	A
386	385	382	378	383	382	383	393	380.7	394	11.45 p	365	10.00 a	29	A
389	385	384	385	388	393	397	386	379.1	397	11.00 p	355	11.46 a	42	A
384	381	379	371	384	384	389	378	380.8	394	1.00 a	370	10.00 a	24	A
386	389	386	385	386	385	389	389	382.7	391	5.00 a	370	9.30 a	21	A a.m., C p.m.
374	376	376	375	375	378	380	382	381.0	394	3 a, 7 a	364	4.00 p	30	C
370	381	382	383	383	385	384	382	379.5	391	8.42 a	370	4.00 p	21	C
386	389	390	390	390	391	389	388	384.5	391	10.00 p	378	11.00 a	13	C
380	382	384	383	391	384	389	391	386.2	392	7.00 a	379	11.00 a	13	C
380	383	379	381	391	390	389	385	383.9	393	1–3 a	369	4.00 p	24	C
374	376	380	381	381	382	382	382	379.4	386	7.20 a	369	10.00 a	17	C
375	382	386	386	389	387	391	390	380.5	391	11.00 p	371	10.00 a	20	C
385	387	387	387	390	390	390	388	388.1	393	0.48 p	382	9.00 a	11	C
384	384	386	385	386	390	389	389	384.6	392	2.00 a	370	11.00 a	22	C
383	384	383	385	388	386	388	390	385.1	395	5.00 a	361	10.00 a	34	C
374.5	376.2	377.2	377.6	379.6	379.9	380.3	379.4	375.7	385.5		362.5		23.0	

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5p	6p	7p	8p	9p	10p	11p	M.N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
397	396	391	392	388	394	391	388	391.1	398	3.00 p	380	11.00 a	18	C
383	390	389	394	393	392	392	388	386.3	394	8.00 p	370	11.00 a	24	C
386	388	387	388	389	390	391	388	386.1	391	11.00 p	377	10.00 a	14	C
393	393	393	393	393	393	393	393	391.0	400	8.00 a	379	Noon	21	C
378	382	384	384	386	388	390	384	387.8	398	8.00 a	378	5.00 p	20	C
386	392	386	389	389	388	390	395	386.7	405	2.30 a	368	Noon	37	A 0–4a., C 4a.–M.N.
389	390	394	392	394	394	394	394	391.7	398	2.00 a	383	10.00 a	15	C
395	395	392	392	397	396	393	391	392.0	398	9.10 p	381	10.00 a	17	C
375	378	386	388	389	389	392	388	382.1	398	4.00 a	366	2.00 p	32	C
388	389	393	392	393	392	389	389	386.6	394	9.10 p	376	11.00 a	18	C
379	380	380	380	372	377	380	374	374.8	381	2 a, 6 a	359	0.50 p	22	C a.m., A p.m.
377	385	381	396	393	388	394	391	379.9	401	8.15 p	357	11.50 a	44	A
383	383	388	390	388	389	391	391	383.0	393	7.05 a	369	1.10 p	24	A a.m., C p.m.
386	374	395	395	395	406	392	398	385.0	407	10.05 p	369	11.00 a	38	C 0a.–3p., A 3p.–M.N.
365	370	375	381	390	390	397	393	385.0	398	10.55 p	365	5.00 p	33	A
390	390	398	402	412	399	402	402	397.7	**413**	8.45 p	390	6.05 p	23	A
391	386	397	394	394	402	397	391	397.2	412	7.15 a	376	Noon	36	C 0a.–9p., A 9p.–M.N.
387	389	389	388	388	389	388	388	390.4	409	0.55 a	384	4.00 p	25	A 0–2a., C 2a.–M.N.
404	405	401	399	397	395	395	397	391.2	407	5.15 p	369	11.30 a	38	C
384	394	388	390	393	389	386	385	389.8	397	4.00 a	377	0.45 p	20	C a.m., A p.m.
376	380	393	395	391	394	399	394	381.5	404	10.45 p	368	5.15 p	36	A
376	380	385	384	385	388	389	391	383.0	394	11.45 p	372	Noon	22	C
391	389	391	393	391	390	388	388	383.7	394	4.15 p	373	11.30 a	21	C
385	382	382	376	380	385	385	383	375.7	386	3.50 p	**344**	Noon	42	C
370	379	379	381	381	380	385	380	369.6	385	11.00 p	349	Noon	36	C
397	399	398	401	399	400	401	395	381.6	402	10.57 p	349	11.30 a	53	C
390	387	393	393	388	385	387	381	384.5	393	7.30 p	369	0.45 p	24	C
386	388	389	390	395	395	395	398	380.9	398	M.N.	367	5.00 a	31	C
385.8	387.8	390.0	390.9	391.2	391.4	391.9	390.2	386.2	398.6		370.9		27.7	

VERTICAL INTENSITY: 0.34 . . . C. G. S.

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
1	...	...	...	...	...	...	...	...	385	386	379	386	393	397	401	400
2	386	378	379	381	387	393	384	389	379	371	352	345	358	373	370	348
3	386	388	386	384	379	380	378	377	361	372	364	366	374	384	388	386
4	385	384	384	378	378	376	373	365	358	353	347	358	369	378	380	375
5	354	355	356	354	353	356	357	352	342	337	330	329	338	353	355	356
6	339	338	339	346	347	351	350	343	339	330	328	331	357	372	376	378
7	357	358	351	354	352	356	354	346	330	320	315	327	342	363	384	384
8	379	375	373	367	364	366	366	356	353	341	347	361	379	388	395	397
9	373	375	380	383	382	380	385	379	369	366	358	364	371	377	398	401
10	382	384	384	381	379	385	389	386	372	356	340	352	362	374	375	375
11	370	367	364	355	347	356	358	340	337	330	323	332	351	377	382	382
12	376	380	379	379	375	375	380	381	372	351	344	349	366	374	375	380
13	378	377	376	372	366	369	368	370	348	341	331	339	344	358	362	368
14	365	354	354	355	353	356	354	346	343	335	323	345	357	371	370	382
15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
16	380	377	352	383	352	369	349	359	320	336	347	352	366	362	373	373
17	404	401	394	392	386	391	396	400	388	377	384	386	395	397	403	395
18	382	394	390	391	390	395	397	391	377	367	354	359	402	383	384	388
19	389	368	383	385	378	381	385	380	369	361	351	360	367	377	386	385
20	381	379	385	380	382	381	383	373	363	356	353	362	372	374	374	381
21	386	384	385	383	389	392	394	395	379	369	369	381	378	390	399	398
22	374	367	366	369	368	373	373	367	358	341	340	358	369	380	382	391
23	372	370	365	365	359	360	361	359	344	335	342	355	366	378	383	374
24	373	374	376	375	372	376	380	374	376	357	355	362	373	379	382	390
25	388	390	389	389	389	395	393	395	383	380	378	375	386	395	394	395
26	392	391	384	385	385	389	392	387	378	375	375	373	371	376	392	396
27	378	384	395	397	402	419	422	419	420	393	386	385	387	396	392	379
28	379	383	381	378	379	383	384	376	377	362	358	364	375	380	392	397
29	395	392	392	392	392	401	398	392	380	368	361	365	383	392	403	405
30	391	396	395	396	390	392	392	389	378	363	357	368	380	386	387	382
31	383	390	390	387	388	389	393	388	384	377	370	360	380	383	391	390
Mean	378.5	377.7	376.8	377.1	374.6	378.8	378.9	375.0	364.7	355.8	351.1	357.3	369.6	378.3	383.7	383.8

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1	390	385	386	382	383	392	390	384	372	361	351	356	370	371	383	391
2	370	370	366	368	372	371	376	375	359	346	341	349	356	367	375	375
3	371	367	368	369	367	379	371	356	357	342	340	361	351	364	361	362
4	362	360	359	359	357	358	365	363	363	353	342	347	327	333	342	349
5	363	355	357	369	359	360	362	357	350	337	348	353	352	351	352	353
6	369	366	366	371	367	372	372	369	359	347	350	359	365	378	374	377
7	367	361	361	367	367	368	367	366	364	345	343	344	352	358	376	370
8	369	373	375	374	365	374	370	371	374	364	356	368	371	368	379	377
9	365	364	372	362	365	367	366	367	362	352	354	355	361	366	375	365
10	363	369	369	369	369	369	369	369	363	337	337	337	342	348	357	350
11	345	346	349	348	344	346	350	351	345	335	332	349	350	357	355	354
12	365	369	364	358	360	344	334	330	335	333	360	352	361	374	372	345
13	...	...	...	...	...	...	...	...	...	...	...	...	375	393	393	399
14	361	353	353	369	350	355	373	369	348	349	346	328	351	364	363	339
15	...	363	367	362	365	363	363	361	360	356	357	347	344	350	356	344
16	344	328	...	...	...	...	...	330	322	326	338	326	338	331	325	324
17	346	345	348	344	...	...	...	...	...	...	...	330	350	345	350	363
18	343	339	354	352	348	355	354	353	326	315	320	338	347	346	348	344
19	342	342	343	343	345	350	347	338	331	345	355	355	347	351	352	362
20	344	346	352	344	361	357	350	339	319	314	320	324	339	349	352	343
21	329	328	329	329	326	334	333	324	300	294	300	303	312	308	308	...
22	327	335	336	324	335	329	323	309	305	301	308	310	314	326	325	303
23	335	329	327	324	325	328	330	338	326	313	317	335	337	342	342	338
24	338	339	338	342	346	344	343	339	329	327	332	341	334	339	337	339
25	345	346	338	338	342	342	343	344	338	341	345	344	352	363	366	366
26	369	361	364	364	366	366	370	367	349	333	333	335	337	345	353	350
27	340	338	342	339	340	348	344	337	331	323	328	329	338	347	350	348
28	344	351	351	351	354	354	355	350	341	329	321	331	339	342	339	337
29	349	344	345	345	345	349	348	340	333	334	338	342	352	355	357	352
30	346	340	340	337	343	337	323	321	318	316	324	333	337	343	349	349
Mean	355.0	354.0	355.1	354.1	355.2	356.6	355.1	351.4	343.7	335.1	336.9	343.2	347.1	353.5	357.1	354.1

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5p	6p	7p	8p	9p	10p	11p	M.N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
391	388	383	386	383	385	388	391	...	...	...	...	...	...	C
336	364	381	389	389	392	392	394	375.4	394	M.N.	336	5.00 p	58	C 0–4a., A 4a.–M.N.
386	386	388	388	388	386	387	390	381.7	390	M.N.	361	9.00 a	29	C
371	362	361	359	356	359	360	358	367.8	385	1.00 a	347	11.00 a	38	C
348	347	347	344	341	340	342	345	347.1	357	7.00 a	329	Noon	28	C
375	356	369	374	370	364	367	357	354.0	378	4.00 p	328	11.00 a	50	A
381	387	383	385	386	384	388	383	361.2	388	11.00 p	315	11.00 a	73	C
393	387	387	388	383	386	382	382	374.7	397	4.00 p	341	10.00 a	56	C
394	390	385	388	383	390	385	380	380.6	401	4.00 p	358	11.00 a	43	C
382	378	381	378	380	377	376	376	375.2	389	7.00 a	340	11.00 a	49	C a.m., A p.m.
378	391	398	400	390	389	385	372	365.6	400	8.00 p	323	11.00 a	77	A
382	379	379	380	381	382	383	385	374.5	385	M.N.	344	11.00 a	41	A
367	358	358	366	367	366	364	364	361.5	378	1.00 a	331	11.00 a	47	A
375	373	368	370	375	377	375	371	360.3	382	4.00 p	323	11.00 a	59	C
...	...	...	...	...	...	...	...	...	...	...	...	...	...	C 0–10a., S^2 10a.–M.N.
395	390	390	394	406	414	391	394	371.9	414	10.00 p	320	9.00 a	94	S^2
389	388	383	379	380	386	383	384	390.0	404	1.00 a	377	10.00 a	27	A a.m., C p.m.
388	389	386	386	385	390	387	383	384.9	402	1.00 p	354	11.00 a	48	A
385	384	386	382	382	385	385	392	378.6	392	M.N.	351	11.00 a	41	A
380	386	390	384	391	405	389	385	378.7	405	10.00 p	353	11.00 a	52	A
388	386	391	394	385	375	379	389	385.7	399	3.00 p	369	10.30 a	30	A
389	387	391	389	386	383	382	378	373.4	391	4p. 7p	340	11.00 a	51	C
378	378	380	380	381	381	380	378	367.7	383	3.00 p	335	10.00 a	48	C
388	391	389	394	391	389	389	392	379.0	394	8.00 p	355	11.00 a	39	C
392	386	388	395	397	398	399	386	390.2	399	11.00 p	375	Noon	24	C
391	389	390	390	390	388	384	379	385.1	396	4.00 p	371	1.00 p	25	C
369	368	369	368	368	369	374	373	387.6	422	7.00 a	368	6.10 p	54	C a.m., A p.m.
389	394	390	391	392	392	391	404	383.4	404	M.N.	358	11.00 a	46	C
394	383	381	387	391	394	392	393	388.6	405	4.00 p	361	11.00 a	44	C
374	376	385	392	394	394	388	385	384.6	396	2.00 a	357	11.00 a	39	C
386	383	389	387	390	390	394	392	385.6	394	11.00 p	360	Noon	34	C
380.8	379.9	381.6	382.8	382.7	383.6	382.2	381.2	375.7	393.9		347.6		46.3	

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5p	6p	7p	8p	9p	10p	11p	M.N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
382	378	379	376	375	376	375	371	377.5	392	6.00 a	351	11.00 a	41	C
375	375	372	369	372	372	365	371	367.0	376	7.00 a	341	11.00 a	35	C
364	362	365	367	367	367	383	382	364.3	383	11.00 p	340	11.00 a	43	C
352	353	360	359	361	360	361	359	354.3	365	7.00 a	327	1.00 p	38	A
353	358	362	365	364	365	369	371	356.9	371	M.N.	337	10.00 a	34	A a.m., C p.m.
373	368	368	373	370	371	358	368	367.1	378	2.00 p	347	10.00 a	31	C
376	368	364	364	372	376	375	376	364.5	393	11.49 p	343	11.00 a	50	S^1
368	369	368	373	371	370	371	375	370.5	379	3.00 p	356	11.00 a	23	A
370	370	370	370	370	370	374	370	365.9	375	3.00 p	352	10.00 a	23	C
338	341	334	335	344	341	340	342	351.3	373	6.25 a	334	7.00 p	39	C
354	352	354	357	362	365	360	369	351.2	369	M.N.	332	11.00 a	37	C
352	355	349	356	369	367	364	376	356.0	376	M.N.	330	8.00 a	46	C a.m., S^1 p.m.
397	376	371	367	343	365	382	364	...	...	...	...	...	...	A
348	345	339	344	343	...	...	...	...	374	7.18 a	328	Noon	46	A
334	331	334	334	338	340	342	345	...	367	3.00 a	330	5.40 p	37	A
312	312	320	326	324	333	332	340	...	...	...	...	...	...	A
351	342	341	339	339	341	344	342	...	...	...	...	...	...	C
336	335	339	336	346	339	344	339	341.5	355	6.00 a	315	10.00 a	40	A
343	335	335	334	330	330	343	348	343.6	362	4.00 p	330	9p.10p	32	C
331	332	332	334	336	331	333	336	338.1	361	5.00 a	314	10.00 a	47	C
...	...	...	330	326	323	323	327	...	...	...	...	...	...	C
294	292	312	321	329	339	331	333	319.2	339	10.00 p	292	6.00 p	47	C
340	348	352	346	346	316	343	344	335.5	352	7.00 p	313	10.00 a	39	C
336	336	337	338	341	349	342	341	338.6	349	10.00 p	327	10.00 a	22	C
364	367	367	371	371	371	375	371	354.6	375	11.00 p	338	9.00 a	37	C
346	348	345	353	352	345	353	357	352.5	370	7.00 a	333	10.11 a	37	C
341	346	345	345	348	348	349	344	341.2	352	3.20 p	323	10.00 a	29	C
337	334	341	345	347	348	351	347	343.3	355	7.00 a	321	11.00 a	34	A
349	349	349	347	349	341	346	345	346.0	357	3.00 p	333	9.00 a	24	C
352	348	348	352	352	346	344	344	339.2	352	8.32 p	316	10.00 a	36	C
351.1	350.8	352.0	353.6	356.0	355.5	356.2	357.5	351.7	367.0		331.0		35.9	

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Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
1	346	345	342	344	346	353	339	329	321	327	324	352	356	349	345	344
2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	352	355	357	352	361	352	351	345	343	344	344	359	367	359	338	349
5	358	358	358	355	363	355	353	348	340	349	349	338	345	347	349	353
6	353	343	342	347	349	351	356	353	351	352	352	359	357	371	374	372
7	366	362	360	355	355	358	366	370	362	359	360	361	356	355	353	353
8	351	353	356	356	362	355	356	355	342	342	345	358	364	373	375	381
9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	370	369	369	369	370	368	362	358	362	362	366	361	375	380	386	383
14	390	390	391	391	393	390	384	381	381	387	387	...	...	...	...	...
15	...	...	...	...	...	...	...	...	...	...	...	372	380	384	384	379
16	378	376	371	376	379	376	371	368	366	367	372	375	384	390	401	400
17	401	400	404	405	405	405	399	395	391	388	396	401	402	412	401	402
18	389	386	390	387	394	394	390	389	387	379	376	392	392	397	393	390
19	406	399	399	399	402	400	396	388	386	388	391	398	417	423	421	413
20	405	407	407	414	421	421	411	397	390	391	397	400	411	415	417	419
21	397	400	404	402	404	402	395	380	381	380	380	390	397	397	398	398
22	392	395	402	410	405	403	399	396	393	393	378	388	402	404	402	402
23	392	399	396	403	404	399	394	385	382	388	395	401	405	410	412	410
24	407	408	408	415	417	422	416	408	402	400	406	412	417	419	421	421
25	414	409	411	415	422	415	405	393	394	395	401	406	411	417	419	421
26	413	410	414	418	421	421	407	403	392	395	402	401	406	409	413	407
27	400	398	398	399	408	408	405	402	401	407	407	408	402	403	404	406
28	399	399	400	404	415	407	398	385	385	393	386	389	381	382	384	387
29	392	393	396	397	395	393	388	380	383	378	391	395	...	...	...	...
30	402	396	392	391	390	389	395	404	406	402	396	388	400	393	406	392
31	412	397	394	400	400	397	400	386	383	380	376	393	394	398	399	410
Mean	386.5	384.8	385.2	387.1	390.6	388.7	384.7	378.0	375.5	376.4	377.2	382.6	388.2	391.0	391.4	391.5

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1	403	407	435	426	431	429	423	420	...	...	...	...	...	...	...	...
2	...	...	...	...	...	...	...	...	383	389	390	387	391	303	406	402
3	402	398	405	405	407	404	393	383	387	384	384	396	397	404	404	411
4	400	403	402	404	406	408	405	400	397	398	410	417	410	415	401	401
5	406	401	402	406	412	412	406	395	388	379	388	392	404	412	412	411
6	399	398	393	398	403	403	397	393	388	390	393	390	397	402	407	405
7	397	394	395	396	394	393	394	391	384	376	384	396	398	397	396	379
8	405	403	396	397	401	401	401	395	391	390	394	398	408	408	403	394
9	397	397	404	402	402	402	402	391	394	395	402	400	412	417	407	411
10	395	395	392	391	395	392	380	382	395	392	397	413	426	429	425	422
11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14	...	...	...	...	...	...	...	...	387	390	390	401	402	402	404	409
15	399	397	399	406	405	397	388	385	384	384	384	397	407	408	407	406
16	409	410	411	411	411	406	396	388	380	381	397	409	407	416	423	416
17	409	409	409	413	412	412	406	399	399	397	402	400	397	403	400	399
18	399	404	405	414	411	408	403	401	395	386	395	389	402	405	410	402
19	398	399	397	401	400	404	397	390	382	381	379	382	386	394	404	404
20	396	397	397	404	405	405	394	391	388	391	398	400	400	404	411	410
21	417	415	417	422	424	421	414	411	414	401	401	397	402	405	401	402
22	402	407	409	413	411	411	409	404	405	401	403	418	414	414	418	413
23	411	414	411	416	423	413	406	403	414	416	408	396	398	405	407	407
24	412	416	413	421	418	416	407	405	407	401	407	412	413	413	416	409
25	407	408	408	411	416	413	407	405	390	381	389	400	406	408	403	399
26	390	390	385	380	391	391	397	382	394	395	388	394	405	401	411	407
27	408	405	407	404	407	407	404	392	397	402	391	388	406	399	390	396
28	392	396	400	405	404	403	394	379	375	377	386	402	413	413	405	404
29	393	394	394	395	395	399	389	379	365	374	373	377	380	394	403	403
30	387	387	382	390	395	390	381	370	364	376	377	387	393	383	387	392
Mean	401.5	401.8	401.9	405.0	406.7	405.2	399.5	392.7	390.5	389.4	392.7	397.3	402.7	404.8	405.4	403.5

MAY, 1898.

5p	6p	7p	8p	9p	10p	11p	M. N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
333	333	330	339	339	336	325	325	338.4	356	1.00 p	**321**	9.00 a	35	A
...	...	...	...	...	...	...	...	...	...	...	...	...	...	A
...	...	...	...	...	...	...	...	...	...	...	...	...	...	C
336	344	362	353	355	355	359	355	352.0	367	1.00 p	336	5.00 p	31	A a.m., S' p.m.
351	346	349	341	353	349	352	353	350.5	363	5.00 a	338	Noon	25	S'
373	375	375	373	376	373	373	365	360.6	376	9.00 p	342	3.00 a	34	C
354	352	356	350	356	358	361	351	357.9	370	8.00 a	350	8.00 p	20	C
387	386	383	374	341	364	361	366	363.2	387	5.00 p	341	9.00 p	46	C
...	...	...	...	...	...	...	...	...	...	...	...	...	...	C
...	...	...	...	...	...	...	...	...	...	...	...	...	...	C
...	...	...	...	...	...	...	...	...	...	...	...	...	...	A
...	...	...	...	...	...	...	...	...	...	...	...	...	...	A
379	379	383	386	386	390	386	389	374.5	390	10.00 p	358	8.00 a	32	A
...	...	...	...	...	...	...	...	...	...	...	...	...	...	C a.m.
377	370	382	383	383	382	383	378	...	...	...	...	...	...	A p.m.
401	399	402	399	402	405	402	402	385.9	405	10.00 p	366	9.00 a	39	C
391	398	393	391	384	389	391	385	397.0	412	2.00 p	384	9.00 p	28	C
393	395	397	400	405	404	405	405	392.9	407	11.40 p	376	11.00 a	31	C
410	409	412	412	411	408	403	405	404.0	423	2.00 p	388	8.00 a	37	C
422	405	409	408	408	408	408	408	408.3	422	5.00 p	390	9.00 a	32	C
397	393	393	394	395	394	388	392	393.8	405	0.06 a	379	10.30 a	26	C
395	392	390	393	393	399	391	388	396.0	410	4.00 a	378	11.00 a	32	C
409	407	407	412	412	409	409	410	402.1	414	8.30 p	382	9.00 a	32	C
419	420	421	423	424	423	419	423	415.5	424	9.00 p	400	10.00 a	24	C
418	412	412	412	412	416	415	413	410.7	422	5.00 a	393	8.00 a	29	C
402	408	405	405	405	402	402	396	406.5	421	5.30 a	392	9.00 a	29	C
402	400	398	400	402	398	397	398	402.1	408	6.05 a	397	11.00 p	11	A
390	382	386	386	387	387	388	392	391.3	415	5.00 a	381	1.00 p	34	A
...	...	411	413	412	399	398	397	...	...	...	...	...	...	A
393	395	388	389	399	401	406	408	396.7	408	M.N.	387	0.20 p	21	A a.m., S' p.m.
420	420	416	420	421	418	425	414	403.0	**425**	11.00 p	376	11.00 a	49	A
389.8	388.6	389.4	389.1	390.7	390.3	389.4	388.2	386.5	400.5		369.7		30.7	

JUNE, 1898.

5p	6p	7p	8p	9p	10p	11p	M. N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
...	...	...	...	...	...	...	...	...	...	...	...	...	...	A
406	405	407	406	406	403	397	401	...	...	...	...	...	...	A
411	408	405	405	403	403	403	400	400.1	411	4p, 5p	383	8.00 a	28	C
405	408	410	410	408	412	407	407	405.6	417	Noon	397	9.00 a	20	C
408	408	408	408	406	402	405	405	403.2	413	5.32 a	379	10.00 a	34	C
405	400	398	398	398	400	402	405	398.4	407	3.00 p	388	9.00 a	19	C
388	392	403	403	406	406	407	411	395.0	411	M.N.	376	10.00 a	35	A a.m., S' p.m.
401	394	404	404	412	404	405	405	400.6	412	9.00 p	390	10.00 a	22	A
410	410	413	406	407	409	404	402	404.1	417	2.00 p	391	8.00 a	26	A
428	421	425	...	...	...	...	...	...	...	...	...	...	...	C
...	...	...	...	...	...	...	...	...	...	...	...	...	...	A
...	...	...	...	...	...	...	...	...	...	...	...	...	...	C
...	...	...	...	...	...	...	...	...	...	...	...	...	...	C
408	406	407	410	409	405	402	403	...	...	...	...	...	...	C
401	397	398	409	408	408	411	410	399.8	411	11.00 p	384	9–11a	27	C a.m., A p.m.
413	413	413	417	419	414	414	414	808.1	**423**	3.00 p	380	9.00 a	43	A
397	397	402	401	403	407	404	400	403.2	413	4.00 a	396	5.40 p	17	C
398	398	398	403	403	405	405	399	401.7	414	4.00 a	386	10.00 a	28	C
399	400	406	406	410	403	404	403	397.0	410	9.00 p	379	11.00 a	31	A
411	413	415	416	417	417	415	413	404.5	417	9.30 p	388	9.00 a	29	C
401	405	411	409	408	408	408	402	409.0	424	5.00 a	397	Noon	27	C
412	411	411	411	411	414	414	414	410.5	419	3.40 p	401	10.00 a	18	C
411	408	412	416	415	411	413	413	410.3	**423**	5.00 a	396	Noon	27	A
411	404	404	409	412	412	411	409	410.7	421	4.00 a	401	10.00 a	20	A
394	394	402	402	398	394	398	388	400.9	416	5.00 a	381	10.00 a	35	A
407	406	405	401	400	408	407	407	397.6	414	2.50 p	380	4.00 a	34	S'
400	393	394	394	396	403	394	406	399.3	408	1.00 a	388	Noon	20	S'
402	398	399	398	402	402	399	396	397.7	413	1-2 p	375	9.00 a	38	A
396	391	395	396	394	398	382	384	389.2	403	3-4 p	365	9.00 a	38	A
387	384	383	382	383	384	384	386	383.8	395	5.00 a	**363**	9.10 a	32	A
403.0	401.4	403.9	404.5	405.2	405.4	404.2	403.5	401.3	413.6		385.0		28.6	

VERTICAL INTENSITY: 0.34 . . . C. G. S.

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
1	382	382	385	383	385	380	374	375	372	374	376	372	373	374	375	383
2	376	376	369	372	380	378	376	369	371	372	379	380	386	385	380	370
3	365	366	368	369	370	369	366	362	358	350	359	366	366	371	374	379
4	379	374	375	380	384	381	373	367	354	343	349	354	373	381	385	385
5	...	...	...	...	...	...	...	...	345	360	359	370	368	373	377	382
6	374	376	380	386	387	382	374	367	362	377	375	371	382	383	375	374
7	373	377	377	378	377	377	363	343	337	343	348	347	343	364	375	375
8	372	373	373	380	384	381	379	368	367	380	379	386	408	414	422	428
9	427	428	429	425	424	420	418	415	411	405	407	407	418	421	421	422
10	421	417	421	422	426	426	427	423	420	417	418	427	433	427	418	411
11	420	425	419	411	421	417	417	404	403	416	422	425	428	422	422	417
12	411	416	420	428	427	427	422	422	413	414	417	417	424	428	427	419
13	426	428	422	423	423	422	419	416	408	411	409	414	413	415	420	415
14	418	415	409	425	423	419	416	413	409	406	394	403	408	418	416	415
15	415	413	417	419	420	418	413	411	420	412	420	420	432	431	434	432
16	439	441	435	433	426	430	426	424	419	417	432	428	426	426	425	426
17	426	428	425	426	428	420	408	402	403	407	406	419	415	421	424	414
18	424	427	426	428	426	422	418	421	416	409	416	433	434	437	431	424
19	423	420	422	418	422	424	414	410	414	424	430	441	445	443	444	437
20	427	424	424	434	431	414	411	403	400	408	416	429	409	400	398	420
21	420	420	420	425	425	426	426	422	412	412	412	413	424	431	437	422
22	425	426	432	437	429	429	417	414	395	409	412	421	421	404	419	420
23	434	437	437	440	438	444	432	425	428	416	416	418	420	424	428	430
24	418	426	426	428	428	430	426	420	415	410	417	424	430	433	437	433
25	437	436	444	445	442	431	423	419	418	421	427	433	427	431	435	435
26	443	431	435	436	437	437	429	420	424	415	422	436	438	434	430	426
27	433	434	433	435	439	442	438	429	425	430	427	428	430	437	445	441
28	430	430	443	431	435	439	435	435	415	415	424	431	437	448	451	450
29	425	429	425	427	431	432	431	427	425	423	422	417	415	427	427	431
30	407	408	408	412	411	403	395	399	379	384	409	408	424	405	398	395
31	400	400	396	405	405	396	386	386	396	396	406	412	416	416	411	408
Mean	413.5	414.1	414.5	416.6	417.2	415.0	409.6	405.0	401.2	402.5	406.8	411.2	414.7	416.2	417.2	415.6

VERTICAL INTENSITY: 0.34 . . . C. G. S.

1	409	404	406	407	412	409	406	391	376	388	395	397	397	400	400	403
2	401	403	402	408	414	412	402	394	389	389	383	389	400	400	403	402
3	399	400	400	395	395	394	389	379	378	382	382	392	393	392	396	396
4	401	402	404	406	410	404	401	396	394	403	414	418	414	409	408	402
5	413	415	412	412	421	413	408	406	395	395	395	401	405	408	409	408
6	405	407	402	409	408	396	384	372	371	385	393	404	409	411	410	400
7	422	420	417	413	410	410	408	400	394	392	405	405	413	417	419	419
8	403	400	398	399	402	395	399	391	396	391	387	394	402	412	422	430
9	417	415	416	415	416	413	413	391	384	388	388	389	396	402	410	407
10	415	418	415	416	415	413	415	410	401	410	415	398	398	395	401	401
11	403	401	394	396	401	398	394	395	401	404	400	404	405	415	420	420
12	410	410	410	414	405	405	406	403	398	398	408	418	417	420	420	421
13	415	411	412	414	417	414	401	395	389	384	388	391	407	414	415	414
14	422	425	425	426	428	419	409	401	401	394	405	409	406	409	411	410
15	400	400	401	404	408	404	393	390	395	393	409	416	428	429	429	427
16	411	413	414	414	419	417	415	400	390	388	398	411	408	403	422	416
17	427	400	400	398	407	403	411	390	394	406	407	414	412	406	414	423
18	432	430	427	420	418	416	405	399	396	399	409	422	427	426	420	421
19	426	425	422	418	416	413	409	401	405	394	407	416	426	426	424	421
20	425	429	425	423	425	424	418	413	396	387	410	418	422	422	427	426
21	425	414	414	414	418	412	408	402	394	389	393	402	417	422	420	429
22	419	422	419	418	419	423	408	403	403	401	403	411	409	414	421	422
23	413	414	408	405	409	407	410	402	398	402	405	409	407	403	401	400
24	409	411	405	412	401	412	411	393	395	395	399	399	401	403	412	411
25	410	407	407	407	410	410	408	398	390	378	390	398	403	413	411	406
26	415	416	414	414	418	427	414	403	384	398	402	414	418	426	428	424
27	414	413	415	411	411	404	407	403	404	408	406	407	420	421	417	415
28	410	409	407	397	411	401	398	390	384	388	395	405	413	415	410	390
29	410	411	405	405	410	409	406	400	392	397	397	409	412	413	416	415
30	417	413	416	417	421	417	413	409	400	399	400	413	417	422	417	420
31	418	421	419	420	419	415	407	407	402	404	404	418	423	423	416	412
Mean	413.4	412.2	410.7	410.5	412.7	410.0	405.7	397.6	393.2	396.7	399.7	406.2	410.5	412.6	414.5	412.9

JULY, 1898.

5p	6p	7p	8p	9p	10p	11p	M. N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
381	375	371	373	376	376	378	382	377.4	385	3 a, 5 a	371	7.00 p	14	A
368	367	371	373	368	368	366	364	373.4	386	1.00 p	364	M.N.	22	C
382	379	379	379	384	380	381	386	371.2	386	M.N.	350	10.00 a	36	C a.m., A p.m.
386	382	374	...	...	...	...	...	...	...	...	...	...	...	A
379	380	382	386	388	384	379	377	...	...	...	...	...	...	A
373	372	371	377	374	380	373	378	376.0	387	5.00 a	362	9.00 a	25	A
375	369	375	379	382	376	379	375	367.0	382	9.00 p	337	9.00 a	45	A
430	425	424	421	424	430	428	430	400.2	433	3.40 p	367	9.00 a	66	A
422	422	428	429	424	421	424	418	420.2	430	3.48 a	405	10.00 a	25	C
412	408	411	413	414	417	417	421	419.5	433	1.00 p	408	6.00 p	25	C
415	418	418	422	424	424	418	419	418.6	428	1.00 p	403	9.00 a	25	C
415	421	425	430	414	415	420	418	420.4	430	8.00 p	411	1.00 a	19	C
420	413	411	412	415	424	427	427	418.0	428	2.00 a	408	9.00 a	20	C
412	411	414	414	414	416	416	416	413.3	425	4.00 a	394	11.00 a	31	C
427	425	427	429	432	428	432	437	423.5	437	M.N.	411	8.00 a	26	C
421	424	428	428	430	432	427	420	428.0	441	2.00 a	417	10.00 a	24	C
414	410	418	422	424	424	418	424	417.7	428	2.00 a	402	8.00 a	26	C
423	422	426	427	427	426	427	426	424.8	434	1.00 p	409	10.00 a	25	C
427	426	427	429	430	430	429	423	427.2	445	1.00 p	410	8.00 a	35	C
420	425	427	422	426	426	426	426	418.6	434	4.00 a	398	3.00 p	36	A
426	424	425	425	426	426	424	424	422.8	437	3.00 p	412	10.00 a	25	C
425	429	429	429	433	433	438	435	423.4	442	9.50 p	395	9.00 a	47	A
425	416	420	420	431	431	429	426	427.7	444	6.00 a	415	10.30 a	29	A
431	433	433	443	437	448	437	437	429.2	448	10.00 p	410	10.00 a	38	A
430	426	431	438	448	443	445	438	433.5	448	9.00 p	418	9.00 a	30	A
430	426	428	431	430	430	430	430	430.3	443	1.00 a	415	10.00 a	28	A
437	437	436	442	437	433	430	430	434.5	445	3.00 p	425	9.00 a	20	A
439	439	435	436	439	437	430	430	434.7	451	3.00 p	415	9.30 a	36	A
426	426	429	430	420	420	412	409	424.4	432	6.00 a	409	M. N.	23	C
388	385	392	395	399	400	398	390	399.7	424	1.00 p	379	9.00 a	45	C
407	407	407	406	409	404	405	402	403.4	416	1.30 p	386	7.30 a	30	A a.m., C p.m.
413.8	412.4	414.3	416.3	416.9	417.1	416.0	415.5	413.1	427.0		396.8		30.2	

AUGUST, 1898.

5p	6p	7p	8p	9p	10p	11p	M. N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
402	400	399	397	401	404	404	404	400.5	413	5.10 a	376	9.00 a	37	A a.m., C p.m.
402	405	409	393	409	405	403	402	400.8	414	5.00 a	383	11.00 a	31	C a.m., A p.m.
396	396	398	405	404	408	404	404	394.9	408	10.00 p	378	9.00 a	30	A
408	411	419	416	417	417	417	415	408.6	419	7.00 p	394	9.00 a	25	A
409	409	411	411	412	416	416	398	407.4	421	5.00 a	395	10.00 a	26	A
400	406	407	413	412	412	416	419	402.1	419	M.N.	371	9.00 a	48	A
411	405	402	401	401	404	402	402	408.0	422	1.00 a	392	10.00 a	30	C
412	411	407	408	408	412	416	414	404.1	430	4.00 p	387	11.00 a	43	C
410	409	410	410	411	413	417	413	406.4	417	1a, 11p	384	9.00 a	33	C
405	401	401	399	399	403	404	403	406.3	418	2.00 a	395	2.00 p	23	C
418	422	415	416	415	415	416	413	407.6	422	6.00 p	394	7.00 a	28	C
416	416	414	412	412	414	414	414	411.5	421	4.00 p	398	9–10 a	23	C
415	414	414	412	411	413	414	415	407.9	417	5.00 a	384	10.00 a	33	C
406	408	408	406	406	406	403	400	410.1	428	5.00 a	394	10.00 a	34	C
425	422	425	426	421	422	418	418	413.0	429	2.30 p	390	8.00 a	39	C
405	406	416	422	415	415	417	423	410.8	423	M.N.	388	10.00 a	35	C a.m., A p.m.
427	432	432	432	430	430	430	428	414.7	432	7.00 p	390	8.00 a	42	A
423	417	415	429	429	435	431	428	419.7	435	10.00 p	396	9.00 a	39	A
422	426	425	430	431	429	430	432	419.7	432	M.N.	394	10.00 a	38	C
423	430	432	433	430	430	424	428	421.7	433	8.00 p	387	10.00 a	46	A
426	420	433	428	427	424	425	418	415.6	433	7.00 p	389	10.00 a	44	A
422	418	418	418	422	416	413	413	414.7	423	6.00 a	401	10.00 a	22	A
396	397	399	839	407	411	408	409	405.0	414	2.00 a	396	5.00 p	18	A
410	418	409	411	408	411	411	411	406.6	418	6.00 p	393	8.00 a	25	C
405	409	409	415	414	415	418	415	406.5	418	11.00 p	378	10.00 a	40	C
421	415	417	419	420	419	417	418	415.0	428	3.00 p	384	9.00 a	44	C
413	415	415	419	422	422	416	420	413.2	422	9.30 p	403	8.00 a	19	A
402	415	418	419	425	413	415	413	406.0	425	9.00 p	384	9.00 a	41	A
420	417	418	417	421	420	416	420	410.7	421	9.00 p	392	9.00 a	29	C
421	417	417	421	418	417	417	417	414.8	422	2.00 p	399	10.00 a	23	C
413	408	410	411	411	413	411	411	413.2	423	1.30 p	402	9.00 a	21	C
412.4	412.7	413.5	414.5	415.1	415.3	414.6	414.1	409.6	422.6		390.0		32.6	

VERTICAL INTENSITY: 0.34 . . . C. G. S.

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
1	415	414	415	414	415	418	415	407	406	407	415	425	423	421	417	416
2	422	419	419	417	423	420	410	403	393	395	413	428	424	416	411	403
3	412	416	416	420	422	421	415	391	391	388	400	412	393	401	417	406
4	413	416	416	416	418	415	407	399	398	403	417	422	422	426	426	421
5	416	422	416	419	416	422	417	410	400	393	402	422	436	435	434	433
6	431	435	434	433	437	437	436	429	416	411	412	417	420	421	420	415
7	420	419	423	419	418	413	410	409	401	406	411	420	423	421	422	406
8	396	392	390	393	382	391	391	390	388	384	393	411	411	414	414	414
9	393	393	384	380	379	385	388	379	379	381	396	394	405	402	404	401
10	363	378	380	331	440	337	358	365	366	382	398	419	428	427	429	419
11	431	417	405	400	410	405	400	396	393	400	399	419	424	414	408	413
12	410	411	411	417	419	419	415	410	402	408	417	424	433	435	424	413
13	399	398	399	395	404	404	400	395	394	393	402	403	408	407	406	406
14	390	394	395	393	390	384	375	373	374	381	385	396	391	389	395	391
15	384	386	388	381	382	382	375	370	372	375	384	396	399	400	392	387
16	397	399	400	400	397	495	388	383	383	394	412	415	413	412	407	402
17	404	402	401	400	402	402	402	400	398	399	411	...	...	...	405	405
18	389	392	390	397	391	387	377	380	384	379	388	394	399	396	399	388
19	389	384	387	383	386	388	386	380	371	370	377	385	381	385	386	384
20	378	375	372	372	379	380	379	372	363	366	373	384	388	395	397	396
21	389	390	389	390	393	389	386	386	399	396	392	411	411	418	420	415
22	404	402	401	398	398	400	391	389	388	389	390	395	394	400	402	398
23	409	406	403	407	414	407	404	397	404	411	418	411	406	405	398	400
24	422	421	422	423	423	417	414	408	405	412	421	427	413	406	403	404
25	414	416	423	414	413	411	404	398	394	394	398	411	409	403	398	398
26	414	414	415	413	412	412	407	401	402	399	403	416	416	419	418	415
27	427	425	423	428	428	431	422	422	421	422	423	417	429	430	426	423
28	444	451	430	427	432	424	415	424	427	424	426	430	431	430	424	415
29	437	435	435	435	431	441	426	423	420	417	432	435	432	432	415	411
30	425	420	424	430	433	433	429	423	423	426	432	436	432	435	437	434
Mean	408.1	408.3	407.1	406.7	409.7	405.4	401.4	397.0	395.1	393.8	404.8	412.9	413.6	413.1	412.1	407.9

VERTICAL INTENSITY: 0.34 . . . C. G. S.

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
1	432	429	438	431	431	429	429	423	412	417	417	435	439	435	428	426
2	412	410	415	416	416	415	397	392	394	398	400	397	397	399	397	395
3	403	406	403	403	403	403	407	403	403	411	420	423	412	418	415	410
4	406	403	399	394	398	395	394	390	399	400	410	415	408	409	408	411
5	420	417	416	417	420	419	414	408	405	405	405	415	418	424	427	425
6	419	420	419	416	420	420	422	417	400	393	400	403	409	424	425	424
7	415	412	411	411	418	426	425	418	411	401	405	420	425	430	429	420
8	431	425	425	422	432	436	436	431	418	403	406	412	418	422	422	420
9	426	427	424	424	429	429	426	421	417	414	417	424	424	425	424	419
10	422	425	423	420	423	422	422	416	414	418	421	427	432	440	437	437
11	428	428	427	424	421	426	417	522	419	419	417	425	420	426	422	422
12	413	414	413	414	414	414	405	395	394	407	419	425	426	428	426	426
13	417	417	416	409	412	411	408	406	403	410	409	417	418	426	425	419
14	418	419	418	417	414	419	420	415	415	407	405	426	426	424	427	425
15	411	419	421	424	429	432	434	431	425	421	424	442	443	431	422	414
16	419	419	424	422	408	413	417	409	406	407	408	422	425	425	424	416
17	411	408	411	407	410	413	408	405	404	407	416	421	424	422	415	414
18	403	401	401	400	404	401	398	388	386	391	394	410	412	415	409	404
19	402	396	399	398	495	404	400	394	390	387	391	401	410	417	419	410
20	400	400	403	409	405	412	410	406	403	382	387	390	399	403	394	394
21	408	406	408	417	403	407	414	415	421	411	413	416	422	422	424	426
22	453	454	448	448	450	457	459	458	454	438	441	448	444	444	444	448
23	461	442	442	456	457	456	454	451	447	456	453	455	464	470	465	461
24	446	441	449	444	443	442	442	442	445	443	454	446	449	452	456	459
25	442	439	440	440	446	454	453	446	443	443	443	446	446	452	455	452
26	455	442	440	449	446	446	439	434	421	439	441	444	451	440	447	443
27	436	430	434	435	435	438	434	428	429	432	432	441	441	447	442	438
28	429	443	453	439	430	435	432	428	424	425	435	444	444	447	445	441
29	437	434	428	431	428	432	432	425	432	422	434	440	435	431	427	434
30	439	441	447	430	429	419	420	421	424	425	428	431	431	431	427	424
31	435	437	436	443	421	421	423	419	425	413	420	430	426	442	447	437
Mean	424.2	422.7	423.6	422.5	421.8	423.7	422.3	418.0	415.6	414.4	418.2	425.5	427.0	429.7	428.2	425.6

SEPTEMBER, 1898.

5p	6p	7p	8p	9p	10p	11p	M.N.	Mean	Maximum	h m	Minimum	h m	Range	Remarks
412	416	421	423	423	423	423	421	418.3	427	7.40 p	406	9.00 a	21	A
399	402	407	412	413	415	411	410	411.8	428	Noon	393	9.00 a	35	A
406	418	422	428	427	426	420	426	412.2	428	8.00 p	388	10.00 a	40	S°
416	408	410	414	415	419	420	420	414.9	426	2.30 p	398	9.00 a	28	C
436	434	432	434	430	435	434	439	423.2	439	M.N.	393	10.00 a	46	C
419	421	421	424	424	425	425	424	424.5	437	5.30 a	411	10.00 a	26	C
404	404	397	405	400	399	406	400	410.2	423	3a, 1p	397	7.00 p	26	C
396	394	397	399	394	396	400	393	396.7	414	3-4 p	382	5.00 a	32	C
402	404	406	410	426	419	407	334	393.8	426	9.00 p	**334**	M.N.	92	A 0a.-9p., S² 9p.-M.N.
396	392	420	418	421	441	422	419	399.9	441	10.00 p	337	6.00 a	104	S²
424	428	429	426	423	415	415	409	412.6	431	1.00 a	393	9.00 a	38	A
407	409	405	407	406	410	404	398	413.1	435	2.00 p	398	M.N.	37	C
404	402	404	402	401	399	397	390	400.5	408	1.00 p	390	M.N.	18	C
387	387	391	388	388	389	385	382	387.2	396	Noon	373	8.00 a	23	C
388	396	395	399	398	398	399	399	388.5	400	2.00 p	370	8.00 a	30	A
401	396	397	406	405	403	408	405	400.7	415	Noon	379	8.21 a	36	C
404	402	404	401	400	397	395	393	...	...	...	...	...	...	C
390	394	394	396	398	398	392	394	391.1	400	1.25 p	377	7.00 a	23	C
381	384	384	385	385	387	378	375	382.5	389	1.00 a	370	10.00 a	19	C
395	396	397	396	400	397	394	391	384.8	497	3p, 7p	363	9.00 a	34	C
413	410	411	410	411	412	413	409	402.7	420	3.00 p	386	7-8 a	34	C
394	398	400	402	406	410	410	402	398.4	410	10-11p	388	9.00 a	22	C
406	406	413	413	418	422	424	422	409.4	424	11.00 p	397	8.00 a	27	A
404	404	404	413	420	421	422	416	414.4	427	Noon	403	3.00 p	24	A
398	400	407	407	409	407	412	412	406.5	423	3.00 a	394	10.00 a	29	A
412	415	423	420	425	425	422	422	414.6	425	9-10 p	399	10.00 a	26	A'a.m., C p.m.
428	429	433	433	434	427	427	431	426.2	434	9.00 p	417	Noon	17	C
415	419	424	429	429	430	430	449	427.7	**451**	2.00 a	413	4.30 p	38	A
404	417	411	417	432	436	430	434	426.6	441	6.00 a	404	5.00 p	37	S°
437	437	435	437	437	440	432	430	431.5	440	10.00 p	420	2.00 a	20	A
405.9	407.6	410.0	412.2	413.7	414.6	412.5	408.0	407.7	422.6		388.4		34.2	

OCTOBER, 1898.

5p	6p	7p	8p	9p	10p	11p	M.N.	Mean	Maximum	h m	Minimum	h m	Range	Remarks
426	426	446	443	444	433	424	418	429.6	446	7.00 p	412	9.00 a	34	A
498	403	404	406	407	406	401	400	401.9	415	3.00 a	392	8.00 a	23	C
408	407	409	412	410	411	410	406	409.0	423	Noon	403	5.00 a	20	C
418	421	421	421	421	421	421	421	408.5	421	9.00 p	390	8.00 a	31	C
425	427	425	425	423	425	423	419	418.6	427	3p, 6p	405	10.00 a	22	C
421	422	426	426	426	423	434	419	417.8	434	11.00 p	393	10.00 a	41	C
418	424	424	429	432	434	434	428	420.8	434	10.30 p	401	10.00 a	33	C
421	424	426	424	426	426	427	427	423.3	436	6.30 a	403	10.00 a	33	C
419	424	425	425	432	424	424	426	423.7	432	9.00 p	414	10.00 a	18	C
435	441	440	442	437	434	434	433	429.0	442	8.00 p	414	9.00 a	28	C
420	425	420	420	418	419	418	414	421.5	428	1.00 a	414	M.N.	14	C
423	429	431	427	425	422	420	417	417.8	431	7.00 p	394	9.00 a	37	C
417	417	417	422	422	422	422	422	416.0	426	2.00 p	403	9.00 a	23	C
426	425	425	427	429	424	424	415	420.4	429	9.00 p	405	11.00 a	24	C
413	419	419	419	419	421	419	413	413.5	443	1.00 p	411	1.00 a	32	A
414	421	423	423	421	427	421	415	417.9	427	10.00 p	406	9.00 a	21	A
401	402	400	405	411	411	407	405	409.9	424	1.00 p	400	7.00 p	24	C
400	400	403	405	408	408	402	399	401.7	415	2.00 p	386	9.00 a	29	C
405	406	404	410	410	410	404	402	402.7	419	3.00 p	387	10.00 a	32	C
394	396	396	396	387	402	409	410	399.5	413	11.20 p	**382**	10.00 a	31	A
429	435	449	451	452	450	450	450	425.0	452	9.00 p	403	5.00 a	49	A
445	445	449	451	462	464	451	460	450.6	464	10.00 p	438	10.00 a	26	A
460	459	460	457	455	449	454	443	455.3	**470**	2.00 p	442	2.30 a	28	A a.m., C p.m.
458	453	453	453	456	454	452	448	449.1	459	4.00 p	441	2.00 a	18	C
446	443	444	450	437	437	454	458	446.2	458	M.N.	437	9.30 p	21	C a.m., A p.m.
446	450	450	461	451	450	452	440	444.9	461	8.00 p	421	9.00 a	40	A
438	441	441	449	451	459	447	447	439.4	459	10.00 p	428	8.00 a	31	A
439	441	438	438	437	434	442	435	437.4	453	3.00 a	424	9.00 a	29	A
431	434	435	445	449	451	452	440	435.0	452	11.00 p	422	10.00 a	30	S°
424	427	430	430	431	432	434	430	429.3	447	3.00 a	419	6.00 a	28	S° a.m., A p.m.
436	436	440	444	444	445	444	439	433.5	447	3.00 p	413	10.00 a	34	S° a.m., C p.m.
424.3	426.6	428.2	430.2	430.1	429.9	429.4	425.8	424.5	438.3		409.8		28.5	

VERTICAL INTENSITY: 0.34 . . . C. G. S.

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
1	432	430	430	424	419	421	420	410	404	410	416	418	418	421	422	412
2	407	403	399	397	398	400	395	398	395	406	415	421	422	423	414	422
3	431	431	432	432	424	424	424	426	418	418	409	406	408	409	414	414
4	433	430	432	428	427	432	432	432	426	421	429	431	431	434	432	434
5	431	427	423	424	421	423	423	421	424	417	415	421	423	421	421	421
6	413	411	414	415	414	419	418	424	427	427	429	428	431	434	436	438
7	422	421	423	420	418	414	411	410	405	412	422	426	429	428	427	422
8	418	427	412	413	410	414	415	412	414	415	418	424	425	425	423	413
9	415	416	420	420	416	417	414	411	403	408	410	405	411	420	418	415
10	402	397	401	398	399	403	401	397	389	386	393	397	405	404	412	411
11	406	407	403	401	396	402	402	399	393	392	393	402	405	410	412	419
12	406	407	408	404	398	399	397	387	376	381	387	395	394	395	401	401
13	401	394	392	389	389	392	390	389	375	382	382	395	399	403	403	401
14	402	402	402	399	401	402	402	401	404	394	399	404	402	410	411	416
15	412	415	409	406	406	407	448	401	399	392	401	404	407	412	409	398
16	392	394	392	395	394	397	394	394	392	392	400	409	406	412	411	403
17	396	397	393	393	391	390	393	391	398	396	389	389	396	395	397	392
18	405	402	397	396	395	398	397	390	378	381	384	383	387	391	394	391
19	399	399	399	399	399	403	399	396	393	...	...	...	...	...	...	...
20	406	407	408	409	411	409	403	...	...	...	...	...	...	...	...	...
21	...	...	...	...	...	...	...	...	...	...	...	...	...	354	340	363
22	372	369	371	371	374	371	380	375	368	366	366	350	377	382	397	393
23	378	385	376	375	377	369	378	380	379	378	383	384	380	382	381	379
24	391	391	392	394	394	395	396	399	392	399	401	402	403	406	403	407
25	400	403	400	394	395	402	402	403	398	398	400	407	404	403	408	403
26	395	394	395	395	398	398	398	398	393	381	387	387	386	385	385	386
27	383	387	377	385	381	386	387	388	373	372	379	379	381	382	384	385
28	368	379	373	372	374	377	380	380	374	367	366	363	370	384	381	379
29	360	363	361	362	352	367	370	367	363	355	364	366	371	372	379	371
30	381	383	385	385	386	389	391	392	387	381	378	385	387	387	390	384
Mean	401.9	402.5	400.5	399.5	398.0	400.3	400.7	399.1	394.2	393.6	396.9	400.3	402.1	404.8	406.1	404.1

VERTICAL INTENSITY: 0.34 . . . C. G. S.

1	377	377	379	380	379	381	384	378	369	361	359	369	370	376	374	371
2	371	372	375	372	368	374	377	374	366	365	368	372	370	370	375	369
3	369	364	368	368	372	372	372	372	372	364	360	361	364	372	375	377
4	373	372	372	376	372	376	381	386	386	373	369	368	367	368	362	364
5	382	385	389	383	377	401	381	380	374	381	380	387	390	393	394	390
6	356	359	363	357	351	378	351	360	354	355	354	364	364	367	368	367
7	364	376	372	377	370	372	368	368	368	381	381	378	383	389	387	379
8	379	376	376	374	374	375	379	373	372	370	368	371	371	374	369	363
9	371	375	374	375	377	377	381	381	375	377	385	381	387	384	373	379
10	380	379	382	382	379	383	385	386	386	386	384	377	371	374	373	364
11	358	354	353	353	353	358	358	358	349	353	356	355	367	371	372	364
12	358	361	358	359	363	365	363	360	358	356	352	354	357	367	370	369
13	358	357	360	360	360	361	361	362	357	365	365	374	389	384	387	382
14	365	366	362	356	355	362	360	362	354	356	353	354	348	343	344	330
15	365	374	371	361	364	367	368	369	365	368	370	376	365	359	362	352
16	363	362	365	364	363	371	377	375	375	375	375	370	360	366	363	365
17	388	391	400	407	399	401	401	403	391	390	390	390	390	396	395	393
18	378	387	408	384	408	390	395	394	395	395	395	401	417	403	400	390
19	388	385	389	393	401	401	397	389	391	399	389	382	380	386	386	377
20	384	389	386	375	372	383	382	378	378	381	387	385	385	384	381	363
21	357	358	356	359	361	366	371	366	357	359	360	369	375	388	394	376
22	379	383	386	380	386	396	398	398	394	399	405	407	406	412	409	396
23	398	402	404	409	415	416	421	419	417	410	413	411	404	409	414	417
24	421	429	431	431	432	438	447	448	439	438	441	438	443	446	453	458
25	444	448	448	448	446	448	446	445	448	432	429	430	428	437	433	420
26	414	414	415	417	414	418	424	425	419	415	414	412	408	410	419	416
27	409	409	409	410	410	410	413	410	403	397	398	398	396	400	396	391
28	386	390	390	391	393	394	398	397	391	390	387	377	383	390	396	391
29	403	408	408	403	401	401	399	399	403	410	416	411	408	410	401	397
30	372	370	376	376	382	383	388	389	387	380	386	388	389	391	394	392
31	369	374	384	379	385	389	395	403	395	391	393	392	395	388	378	374
Mean	379.9	382.0	384.0	382.5	383.5	386.9	388.0	387.4	383.5	383.0	383.1	384.2	384.4	387.1	386.8	381.5

NOVEMBER, 1898.

5p	6p	7p	8p	9p	10p	11p	M. N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
411	414	419	416	416	418	414	411	417.7	432	1.00 a	404	9.00 a	28	C
424	424	433	433	433	433	437	437	415.4	440	11.40 p	395	7a, 9a	45	C
414	414	414	414	430	434	437	436	421.8	437	11.00 p	406	Noon	31	A
431	428	431	431	435	439	441	437	431.5	441	11.00 p	421	10.00 a	20	C
414	415	409	420	423	421	417	414	420.4	431	1.00 a	409	7.00 p	22	C
431	428	426	426	427	424	425	423	424.5	438	4.00 p	411	2.00 a	27	C
418	420	420	427	430	428	421	418	420.5	430	9.00 p	405	9.00 a	25	C
409	413	417	417	417	421	422	418	417.2	427	2.00 a	409	5.00 p	18	A
412	414	412	418	416	416	415	405	413.6	420	3.30a, 2p	403	9.00 a	17	A
406	407	408	411	412	412	412	409	403.0	413	11.15 p	386	10.00 a	27	C
412	408	404	405	403	408	408	408	404.1	419	4.00 p	392	10.00 a	27	C
406	409	414	412	413	410	412	407	400.5	414	7.00 p	376	9.00 a	38	C
401	400	401	401	404	407	407	403	395.8	409	10.32 p	375	9.00 a	34	C
416	416	418	417	420	420	418	417	408.0	420	9.30 p	394	10.00 a	26	C
497	397	498	400	400	403	397	497	403.1	415	2.00 a	392	10.00 a	23	C a.m., A p.m.
399	400	403	409	408	408	402	396	400.1	412	2.00 p	391	9.30 a	21	C
391	386	386	389	398	402	398	397	393.5	402	10.00 p	386	6.30 p	16	A
401	379	372	388	390	393	400	396	391.2	405	1.00 a	372	7.00 p	33	A
402	405	410	414	420	414	411	401	...	...	...	...	...	...	C
...	...	...	...	...	...	...	...	...	...	...	...	...	...	
360	355	361	370	377	386	373	370	....	...	...	...	...	...	A p.m.
393	392	379	388	378	382	378	400	379.2	400	M.N.	350	Noon	50	S'
380	377	386	386	395	391	392	395	381.9	396	9.25 p	369	6.00 a	27	A
404	405	403	405	403	404	407	401	400.0	407	11.00 p	391	1.00 a	16	C
398	399	402	403	405	405	405	400	401.5	408	3.00 p	394	4.00 a	14	C
387	387	388	390	387	396	398	402	391.5	402	M.N.	381	10.00 a	21	C
376	375	378	378	379	376	376	373	380.0	388	8.00 a	372	10.00 a	16	C
375	371	370	372	369	368	366	365	372.6	384	2.00 p	363	Noon	21	C
382	396	380	391	394	394	392	388	373.3	396	6.00 p	352	5.00 a	44	C
378	377	379	384	384	385	384	383	384.4	392	8.00 a	377	6.00 p	15	C
402.4	401.9	401.8	405.2	406.3	407.3	406.7	405.5	401.7	414.0		388.0		26.0	

DECEMBER, 1898.

5p	6p	7p	8p	9p	10p	11p	M. N.	Mean	Maximum		Minimum		Range	Remarks
										h m		h m		
370	373	375	375	375	375	375	375	374.0	384	7.00 a	359	11.00 a	25	C
369	366	364	370	366	370	371	371	370,2	377	7.00 a	364	7.00 p	13	C
376	380	380	380	380	380	380	380	372.4	380	6p-M. N.	360	11.00 a	20	C
365	365	362	370	367	366	368	365	370.8	386	8-9 a	362	3p, 7p	24	A a.m., C p.m.
389	384	...	...	...	...	...	...	...	401	6.00 a	374	9.00 a	27	C
372	370	369	373	370	373	372	371	364.1	378	6.00 a	351	5a, 7a	27	S' a.m., C p.m.
375	364	372	380	382	386	386	380	376.6	389	2.00 p	364	6.00 p	25	A
363	366	369	372	372	375	378	375	372.2	379	1a, 7a	363	4.30 p	16	C
382	382	381	382	382	388	387	385	380.0	388	10.00 p	371	1.00 a	17	C
360	358	360	360	360	360	361	357	372.8	386	8-10a	357	M.N.	29	C
364	360	358	355	347	355	356	356	357.8	372	3.00 p	347	9.00 p	25	C a.m., A p.m.
371	368	369	365	369	369	366	363	362.9	371	5.00 p	352	11.00 a	19	C
384	387	386	383	383	379	374	366	371.8	389	1.00 p	357	1a, 9a	32	C
333	337	342	339	354	350	358	366	352.1	366	2a, M.N.	330	4.00 p	36	C a.m., A p.m.
350	346	349	349	357	358	361	361	362.0	376	Noon	346	6.00 p	30	A
363	369	375	381	381	385	391	389	371.8	391	11.00 p	353	3.45 p	38	A
387	387	388	390	391	392	386	393	393.3	407	4.00 a	386	11.00 p	21	A
386	391	392	389	389	390	388	387	393.8	417	1.00 p	378	1.00 a	39	C 1a.-5p., A 5p.-M.N.
367	367	371	373	380	383	381	384	385.0	401	5.30 a	367	5.30 p	34	C
360	355	355	354	366	369	368	354	374.3	389	2.00 a	354	8p, M.N.	35	A
366	366	370	370	375	373	376	373	368.4	394	3.00 p	356	3.00 a	38	C
389	378	378	381	390	393	395	398	393.2	412	2.00 p	378	6.30 p	34	C
414	411	408	411	415	418	409	413	411.6	421	7.00 a	398	1.00 a	23	C
451	444	436	441	444	444	450	447	441.2	458	4.00 p	421	1.00 a	37	C
409	405	407	409	416	422	419	421	430.3	448	2-4 a	405	6.00 p	43	C
414	419	424	424	419	414	413	410	416.3	425	8.00 a	408	1.00 p	17	C
389	386	382	379	376	380	383	388	396.7	413	7.00 a	376	9.00 p	37	C
390	392	390	393	390	398	399	396	391.3	399	11.00 p	377	Noon	22	A
392	395	392	391	392	386	385	377	399.1	416	11.00 a	377	M.N.	39	A
379	381	375	377	372	370	373	374	381.0	394	3.00 p	370	10.00 p	24	C 0a.-9p., A 9p.-M.N.
367	372	373	373	377	376	367	367	381.5	403	8.00 a	367	5p, 11p-M.N.	36	C
378.6	378.0	378.4	380.0	381.2	382.6	382.5	381.4	382.9	396.1		367.6		28.5	

MEAN VALUES OF

DECLINATION:

Month \ Hour	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
January	31.69	31.54	31.64	31.74	31.83	32.08	31.85	30.98	30.53	31.10	32.17	33.23	33.31	32.67	31.84	31.48
February	31.44	31.42	31.43	31.34	31.31	31.29	31.22	31.00	30.72	31.00	32.00	33.18	33.18	32.77	32.18	31.61
March	31.62	31.71	31.58	31.52	31.82	32.18	31.44	30.36	29.09	29.14	31.23	34.04	35.17	35.28	34.21	32.82
April	31.03	30.97	30.88	30.86	30.91	30.55	29.68	28.58	28.58	29.97	31.94	33.61	34.78	34.73	33.55	32.72
May	31.52	31.48	31.35	31.26	30.75	29.96	29.40	29.24	30.36	31.82	33.55	34.87	35.53	35.13	34.40	33.38
June	32.01	31.85	31.71	31.49	30.93	30.19	29.51	29.59	30.29	31.96	33.69	34.96	35.49	35.40	34.57	33.64
July	31.96	31.83	31.66	31.46	31.10	29.97	29.40	29.73	30.66	32.38	33.94	35.29	35.67	35.68	34.75	33.46
August	31.92	31.60	31.33	31.28	30.89	29.84	29.64	29.80	31.12	33.03	34.76	35.58	36.10	35.57	34.42	33.29
September	32.30	31.98	31.95	31.77	31.61	31.37	30.82	31.31	32.69	34.49	36.18	36.45	36.13	35.13	33.85	33.08
October	32.33	32.22	32.09	32.05	31.97	32.15	31.65	31.81	32.40	33.49	34.76	35.28	34.79	34.03	33.02	32.64
November	32.08	32.03	32.18	32.27	32.39	32.53	32.43	31.98	31.91	32.56	33.43	34.17	33.96	33.40	32.77	32.42
December	32.27	32.08	32.24	32.18	32.18	32.35	32.39	31.76	31.38	31.74	32.75	33.68	33.70	33.18	32.48	31.93
Year	31.85	31.73	31.67	31.60	31.47	31.20	30.79	30.51	30.81	31.89	33.37	34.52	34.82	34.41	33.50	32.71

HORIZONTAL INTENSITY:

Month \ Hour	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
January	826.2	825.1	825.5	825.5	826.5	827.0	826.9	825.6	819.2	814.9	817.7	821.3	824.3	827.7	828.5	827.7
February	832.5	831.1	832.0	830.6	830.7	830.9	833.4	832.6	831.0	830.4	831.0	830.0	834.3	837.5	838.0	837.4
March	813.6	813.3	813.4	814.5	811.9	813.3	812.7	810.0	800.2	794.8	791.3	792.6	805.7	813.1	818.2	817.3
April	830.4	830.8	831.1	832.2	831.1	830.7	827.9	822.6	816.4	813.7	819.0	826.0	837.1	841.8	842.3	837.9
May	852.6	850.7	851.2	850.6	853.5	851.9	846.9	840.8	836.7	840.4	846.3	853.9	854.3	859.6	859.9	859.0
June	831.4	831.3	831.0	830.1	832.9	829.7	825.7	821.8	820.4	823.1	829.2	835.5	839.6	843.5	844.1	839.8
July	858.2	857.4	856.0	854.7	855.5	852.7	843.5	842.4	846.0	849.9	858.0	863.1	865.3	865.8	866.4	865.3
August	877.1	877.8	876.6	874.6	875.0	870.8	864.0	856.3	853.3	857.0	864.4	874.0	879.1	881.9	882.0	880.6
September	853.5	853.5	853.5	853.7	853.4	851.9	846.4	837.6	835.3	835.8	844.6	856.5	861.0	864.2	861.0	855.5
October	863.6	863.5	864.7	863.2	863.2	861.9	860.2	853.3	851.0	851.4	855.6	863.7	870.2	874.4	873.8	870.1
November	861.9	863.6	862.1	860.8	861.7	862.1	862.3	859.7	857.5	856.5	860.2	866.5	870.7	872.8	872.6	869.7
December	838.7	839.7	839.9	840.2	389.1	840.2	840.9	840.3	833.8	830.6	831.0	833.8	836.6	841.7	845.0	845.0
Year	845.0	844.8	844.7	844.2	844.5	843.6	840.9	836.9	833.4	833.2	837.4	843.1	848.2	852.0	852.6	850.4

VERTICAL INTENSITY:

Month \ Hour	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p
January	378.0	377.6	377.3	377.0	377.5	377.5	379.1	376.3	368.5	364.9	366.9	370.1	373.7	377.3	377.2	374.2
February	388.5	387.3	387.6	386.9	386.0	387.1	388.2	386.5	382.2	379.6	377.3	375.7	379.0	383.3	386.7	387.0
March	378.5	377.7	376.8	377.1	374.6	378.8	378.9	375.0	364.7	355.8	351.1	357.3	369.6	378.3	383.7	383.8
April	355.0	354.0	355.1	354.1	355.2	356.6	355.1	351.4	343.7	335.1	336.9	343.2	347.1	353.5	357.1	354.1
May	386.5	384.8	385.2	387.1	390.6	388.7	384.7	378.0	375.5	376.4	377.2	382.6	388.2	391.0	391.4	391.5
June	401.5	401.8	401.9	405.0	406.7	405.2	399.5	392.7	390.5	389.4	392.7	397.3	402.7	404.8	405.4	403.5
July	413.5	414.1	414.5	416.6	417.2	415.0	409.6	405.0	401.2	402.5	406.8	411.2	414.7	416.2	417.2	415.6
August	413.4	412.2	410.7	410.5	412.7	410.0	405.7	397.6	393.2	395.1 6.7	399.7	406.2	410.5	412.6	414.5	412.9
September	408.1	408.3	407.1	406.7	409.7	405.4	401.4	397.0	395.1	396.8	404.8	412.9	413.6	413.1	412.1	407.9
October	424.2	422.7	423.6	422.5	421.8	423.7	422.3	418.0	415.6	414.4	418.2	425.5	427.0	429.7	428.2	425.6
November	401.9	402.5	400.5	399.5	398.0	400.3	400.7	399.1	394.2	393.6	396.9	400.3	402.1	404.8	406.1	404.1
December	379.9	382.0	384.0	382.5	383.5	386.9	388.0	387.4	383.5	383.0	383.1	384.2	384.4	387.1	386.8	381.5
Year	394.1	393.7	393.7	393.8	394.5	394.6	392.8	388.7	384.0	382.2 3	384.3	388.9	392.7	396.0	397.2	395.1

MAGNETIC ELEMENTS.

YEAR 1898.

4°+ . .′ . W

5p	6p	7p	8p	9p	10p	11p	M.N.	Mean	Mean Max.	Mean Min.	Mean Range	Absolute Max.	Day	Absolute Min.	Day	Range
31.40	31.32	31.54	31.31	31.54	31.56	31.64	31.67	31.74	33.63	29.91	3.72	35.9	2	28.4	17	7.5
31.28	31.21	31.19	31.47	31.47	31.42	31.50	31.33	31.58	33.90	29.35	4.55	37.0	12	25.0	3	12.0
32.07	32.08	32.11	31.93	31.92	31.75	31.72	31.63	32.02	36.05	28.10	7.95	48.6	16	25.0	13	23.6
31.58	31.43	31.77	31.77	31.64	31.78	31.74	31.42	31.52	35.11	27.84	7.27	36.9	7	26.0	28	10.9
32.62	32.37	32.41	32.09	32.22	32.47	32.25	32.13	32.19	36.04	28.47	7.57	39.1	30	26.2	24	12.9
32.91	32.57	32.43	32.40	32.33	32.24	32.35	32.15	32.36	35.90	28.86	7.04	37.9	11	26.0	7	11.9
32.52	32.18	32.31	32.35	32.39	32.41	32.30	32.17	32.40	36.43	28.94	7.49	40.8	20	27.4	22	13.4
32.24	32.01	32.18	32.19	32.14	32.34	32.26	32.13	32.40	36.64	29.03	7.61	40.5	17	27.1	17	13.4
32.88	32.70	32.99	32.88	32.85	32.83	32.90	32.62	33.07	37.07	29.72	7.35	40.1	10	21.6	10	18.5
32.81	32.59	32.81	32.91	32.75	32.75	32.54	32.56	32.85	35.58	30.47	5.11	37.5	29	27.4	30	10.1
32.39	32.51	32.48	32.73	32.70	32.61	32.46	32.40	32.62	34.35	30.99	3.36	37.0	22	28.9	22	8.1
31.89	31.93	31.97	32.26	32.25	32.18	32.25	32.21	32.30	34.19	30.49	3.70	35.4	16	29.1	25	6.3
32.22	32.07	32.18	32.19	32.18	32.19	32.16	32.03	32.25	35.41	29.35	6.06	38.89		26.51		12.38

0.29 . . . C. G. S.

5p	6p	7p	8p	9p	10p	11p	M.N.	Mean	Mean Max.	Mean Min.	Mean Range	Absolute Max.	Day	Absolute Min.	Day	Range
827.1	826.3	824.7	822.8	823.0	823.4	823.9	824.1	824.4	840.2	805.7	34.5	863	10	775	11	88
832.5	831.2	831.6	831.0	829.8	831.9	832.1	831.5	832.3	848.1	814.3	33.8	888	6	773	12	115
811.1	809.3	809.6	811.7	811.7	814.8	812.6	813.5	809.6	830.9	781.6	49.3	871	2	733	2	138
833.8	829.4	829.2	829.7	830.4	830.2	830.5	830.8	829.8	849.0	806.6	42.4	888	28	761	7, 12	127
852.7	850.0	850.9	852.6	852.8	849.9	851.5	851.6	850.9	871.0	828.5	42.5	913	4	792	30, 31	121
836.3	833.8	833.8	834.3	835.1	833.8	833.6	833.8	832.6	850.6	813.1	37.5	906	7	787	3	119
862.7	859.0	856.9	856.6	857.9	858.1	859.6	859.0	857.1	910.3	866.0	44.3	915	31	809	20	106
879.6	877.7	877.2	877.5	875.8	878.2	875.7	879.4	873.6	896.1	844.6	51.5	929	16	812	17	117
851.9	851.0	851.4	849.5	852.7	855.4	854.2	855.5	851.6	878.6	826.9	51.7	942	9	775	11	167
864.4	862.4	861.9	862.1	861.2	860.3	862.2	862.5	862.5	882.8	838.8	44.0	912	30	794	20	118
865.9	863.2	860.3	860.0	860.8	861.7	862.4	863.9	863.3	879.1	843.4	35.7	909	16	790	22	119
842.1	839.4	837.8	836.1	836.9	836.2	837.8	837.8	838.4	854.4	821.4	33.0	900	6	781	21	119
846.7	844.3	843.8	843.7	844.0	844.5	844.7	845.2	843.8	865.9	824.2	41.7	903.0		781.8		121.2

0.34 . . . C. G. S.

5p	6p	7p	8p	9p	10p	11p	M.N.	Mean	Mean Max.	Mean Min.	Mean Range	Absolute Max.	Day	Absolute Min.	Day	Range
374.5	376.2	377.2	377.6	379.6	379.9	380.3	379.4	375.7	385.5	362.5	23.0	402	17	342	6	60
385.8	387.8	390.0	390.9	391.2	391.4	391.9	390.2	386.2	398.6	370.9	27.7	416	12	344	24	72
380.8	379.9	381.6	382.8	382.7	383.6	382.2	381.2	375.7	393.9	347.6	46.3	422	27	315	7	107
351.1	350.8	352.0	353.6	356.0	355.5	356.2	357.5	351.7	367.0	331.0	35.9	393	7	292	22	101
389.8	388.6	389.4	389.1	390.7	390 3	389.4	388.2	386.5	400.5	369.7	30.7	425	31	321	1	104
403.0	401.4	403.9	404.5	405.2	405.4	404.2	403.5	401.3	413.6	385.0	28.6	423	16, 23	363	30	60
413.8	412.4	414.3	416.3	416.9	417.1	416.0	415.5	413.1	427.0	396.8	30.2	451	28	337	7	114
412.4	412.7	413.5	414.5	415.1	415.3	414.6	414.1	409.6	422.6	390.0	32.6	435	18	371	6	64
405.9	407.6	410.0	412.2	413.7	414.6	412.5	408.0	407.7	422.6	388.4	34.2	451	28	334	9	117
424.3	426.6	428.2	430.2	430.1	429.9	429.4	425 8	424.5	438.3	409.8	28.5	470	23	382	20	88
402.4	401.9	401.8	405.2	406.3	407.3	406.7	405.5	401.7	414.0	388.0	26.0	441	4	352	29	89
378.6	378.0	378.4	380.0	381.2	382.6	382.5	381.4	382.9	396.1	367.6	28.5	458	24	330	14	128
393.5	393.7	395.0	396.4	397.4	397.7	397.2	395.8	393.0	406.6	375.6	31.0	432.3		339.9		92.4

VALUES OF THE COEFFICIENTS IN THE PERIODICAL EXPRESSION

$$f(t)=p_0+p_1 \cos t+q_1 \sin t+p_2 \cos 2t+q_2 \sin 2t+p_3 \cos 3t+q_3 \sin 3t+p_4 \cos 4t+q_4 \sin 4t,$$

in which t is the Central Standard Mean Time (mean time of the meridian 135°) coverted into arc, and $f(t)$ the mean value of the magnetic element at the time t for each month and for the year.

The values of the coefficients for declination are given in degrees and minutes and those for horizontal and vertical intensities in 10^{-5} C. G. S. unit.

1898.

DECLINATION.

Month	p_0	p_1	q_1	p_2	q_2	p_3	q_3	p_4	q_4
	° ′	′	′	′	′	′	′	′	′
Januray	4 31.74	− 0.28	− 0.04	+ 0.34	+ 0.34	− 0.36	− 0.37	+ 0.36	+ 0.14
February	31.58	− 0.40	− 0.23	+ 0.44	+ 0.33	− 0.30	− 0.32	+ 0.15	+ 0.16
March	32.02	− 0.49	− 0.94	+ 0.34	+ 1.16	− 0.44	− 1.03	+ 0.37	+ 0.54
April	31.52	− 0.54	− 1.31	+ 0.80	+ 1.00	− 0.63	− 0.76	+ 0.28	+ 0.13
May	32.19	− 0.90	− 1.49	+ 1.15	+ 0.79	− 0.60	− 0.32	+ 0.13	− 0.09
June	32.36	− 0.87	− 1.45	+ 1.10	+ 0.89	− 0.58	− 0.25	+ 0.11	− 0.04
July	32.40	− 1.00	− 1.33	+ 1.28	+ 0.82	− 0.63	− 0.29	+ 0.00	− 0.05
August	32 40	− 1.26	− 1.23	+ 1.47	+ 0.62	− 0.66	− 0.20	+ 0.08	− 0.08
September	32.07	− 1.32	− 0.80	+ 1.31	+ 0.06	− 0.71	+ 0.04	+ 0.25	− 0.16
October	32.85	− 0.80	− 0.45	+ 0.76	+ 0.00	− 0.53	− 0.02	+ 0.27	− 0.03
November	32.62	− 0.44	− 0.23	+ 0.34	+ 0.05	− 0.38	− 0 25	+ 0.24	+ 0.04
December	32.30	− 0.26	− 0.07	+ 0.36	+ 0.22	− 0.33	− 0.33	+ 0.24	+ 0.18
Year	32.25	− 0.71	− 0.80	+ 0.81	+ 0.52	− 0.51	− 0.34	+ 0.21	+ 0.06

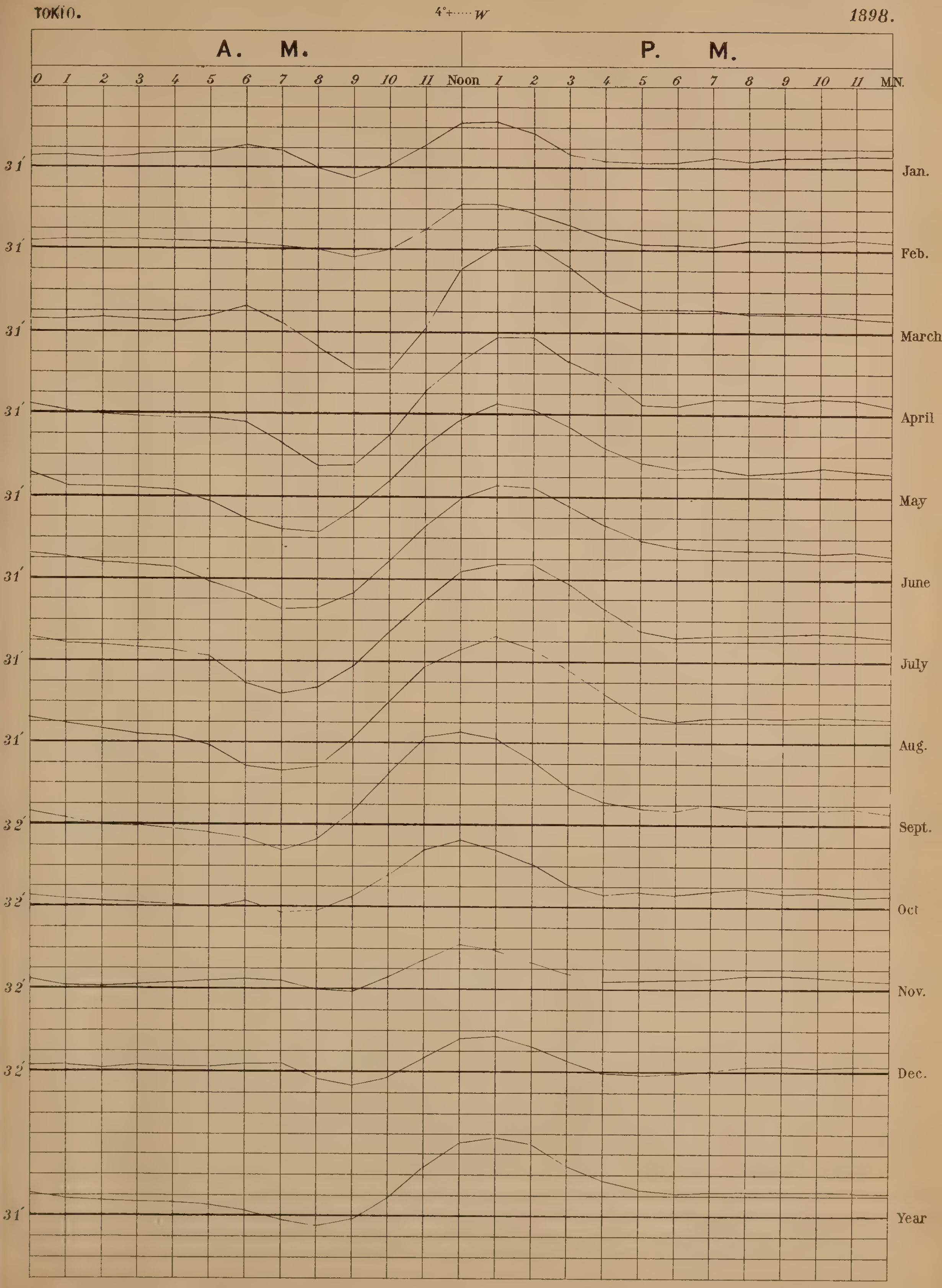
HORIZONTAL INTENSITY.

Month	p_0	p_1	q_1	p_2	q_2	p_3	q_3	p_4	q_4
January	29824.4	+ 1.09	− 0.73	− 2.04	+ 2.83	+ 1.25	− 1.73	+ 0.40	+ 1.20
February	832.3	− 1.14	− 1.07	+ 0.04	+ 1.62	+ 1.42	− 1.09	− 0.78	+ 0.53
March	809.6	+ 5.85	− 1.75	− 3.70	+ 4.25	+ 3.32	− 3.96	− 2.11	+ 1.54
April	829.8	+ 1.38	− 4.16	− 0.88	+ 6.65	+ 0.48	− 4.72	− 0.27	+ 1.52
May	850.9	+ 0.81	− 3.93	+ 0.25	+ 5.14	− 0.99	− 3.37	+ 0.78	+ 0.32
June	832.6	− 0.24	− 5.73	+ 1.09	+ 4.67	− 0.97	− 3.27	+ 0.38	+ 0.19
July	857.1	− 0.43	− 6.16	+ 3.00	+ 5.14	− 1.42	− 1.47	+ 1.02	− 1.28
August	873.6	+ 4.26	− 6.96	+ 0.69	+ 7.00	− 1.78	− 2.91	+ 1.51	+ 0.42
September	851.6	+ 1.87	− 4.29	+ 2.02	+ 6.68	− 1.77	− 4.87	+ 1.50	+ 0.91
October	862.5	− 0.09	− 3.65	+ 0.33	+ 6.27	− 0.35	− 3.35	+ 0.11	+ 1.36
November	863.3	− 1.95	− 2.58	+ 0.97	+ 4.08	+ 0.90	− 2.44	+ 0.25	+ 0.89
December	338.4	+ 0.69	− 0.87	− 2.36	+ 3.25	+ 2.09	− 1.47	− 0.61	+ 0.71
Year	843.8	+ 1.01	− 3.49	− 0.04	+ 4.78	+ 0.17	− 2.89	+ 0.19	+ 0.70

VERTICAL INTENSITY.

Month	p_0	p_1	q_1	p_2	q_2	p_3	q_3	p_4	q_4
January	34375.7	+ 4.16	− 0.85	− 1.25	+ 1.08	+ 0.75	− 2.81	+ 0.15	+ 1.56
February	386.2	+ 5.09	− 1.31	− 2.11	− 0.54	+ 1.57	− 1.28	− 0.83	+ 0.56
March	375.7	+ 7.80	− 4.98	− 5.14	+ 2.64	+ 3.81	− 4.53	− 1.59	+ 2.41
April	351.7	+ 5.61	− 1.01	− 2.50	+ 2.83	+ 1.95	− 4.08	− 0.43	+ 1.70
May	386.5	+ 2.80	− 3.82	− 1.63	+ 2.95	− 0.33	− 3.53	+ 0.76	− 0.04
June	401.3	+ 3.67	− 2.62	− 1.53	+ 3.20	− 1.12	− 3.68	+ 0.69	+ 0.11
July	413.1	+ 3.36	− 2.64	− 0.49	+ 3.21	− 1.44	− 3.23	+ 0.46	− 0.14
August	409.6	+ 5.37	− 4.81	− 0.65	+ 3.91	− 1.04	− 3.27	+ 1.28	+ 0.49
September	407.7	+ 2.36	− 4.44	+ 1.90	+ 2.34	− 2.98	− 3.59	+ 0.88	+ 0.35
October	424.5	+ 2.35	− 4.39	+ 0.26	+ 1.05	− 1.02	− 3.09	+ 0.44	+ 1.17
November	401.7	+ 2.40	− 3.27	+ 0.65	+ 0.85	+ 0.69	− 2.51	− 0.16	+ 0.69
December	382.9	− 1.71	+ 2.21	+ 0.30	+ 0.28	+ 0.58	− 2.25	− 0.74	+ 0.71
Year	393.0	+ 3.60	− 2.66	− 1.02	+ 2.00	+ 0.11	− 3.16	+ 0.08	+ 0.80

DIURNAL VARIATION OF DECLINATION

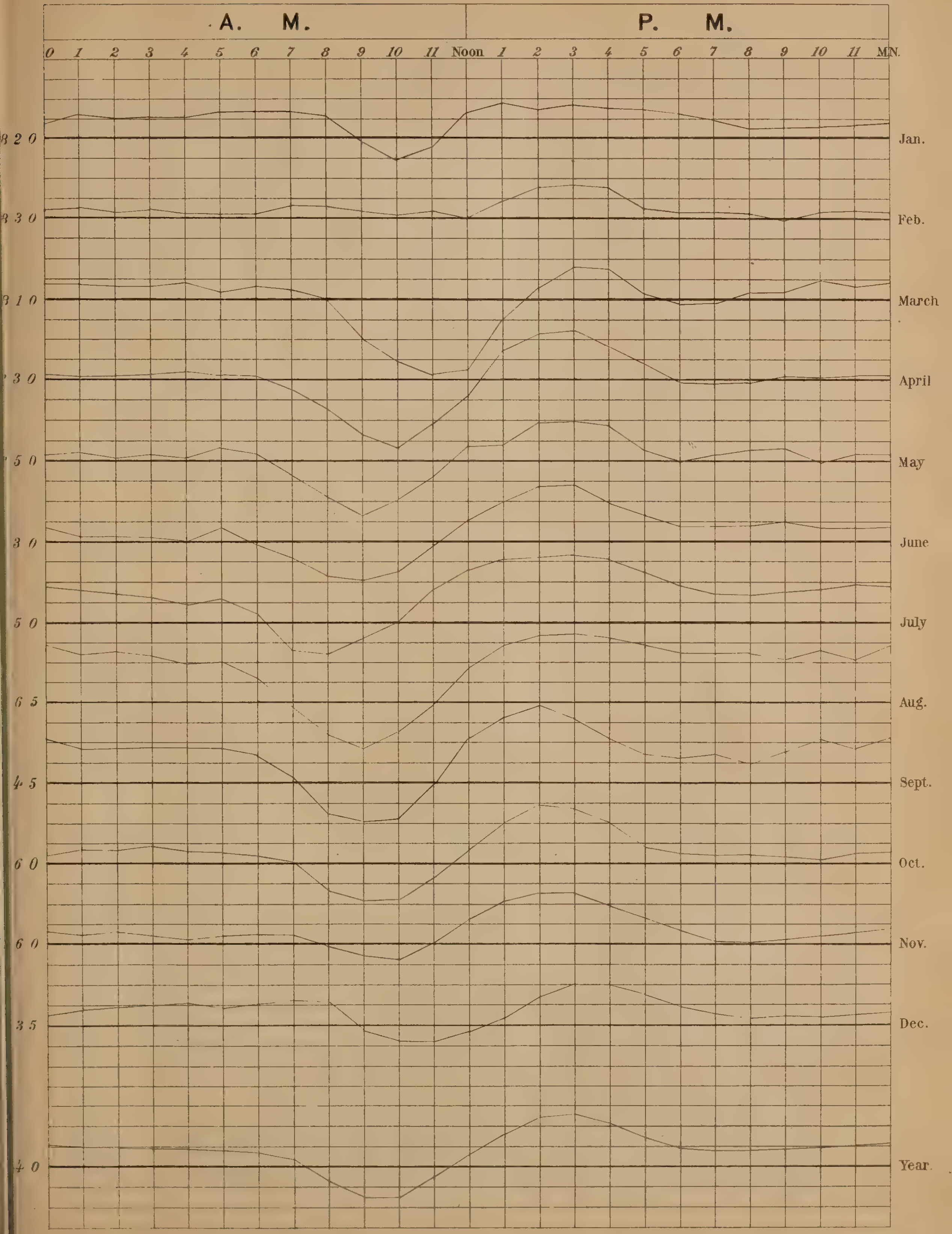


I Div. = 1′

PLATE F. II.

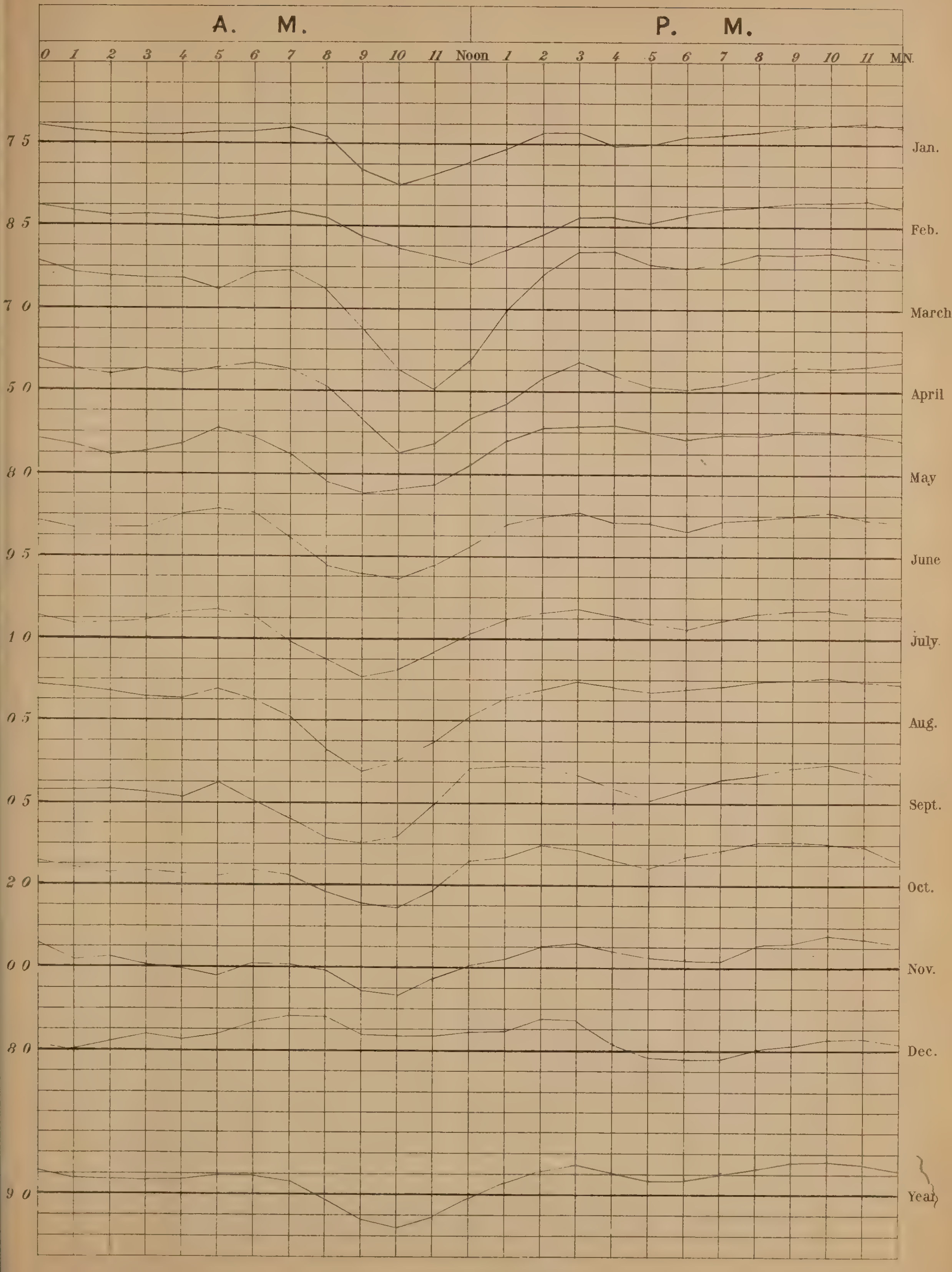
DIURNAL VARIATION OF HORIZONTAL INTENSITY

TOKIO. 0.29···· C.G.S. 1898.



DIURNAL VARIATION OF VERTICAL INTENSITY

TOKIO. 0.34 ······ C. G. S. 1898.

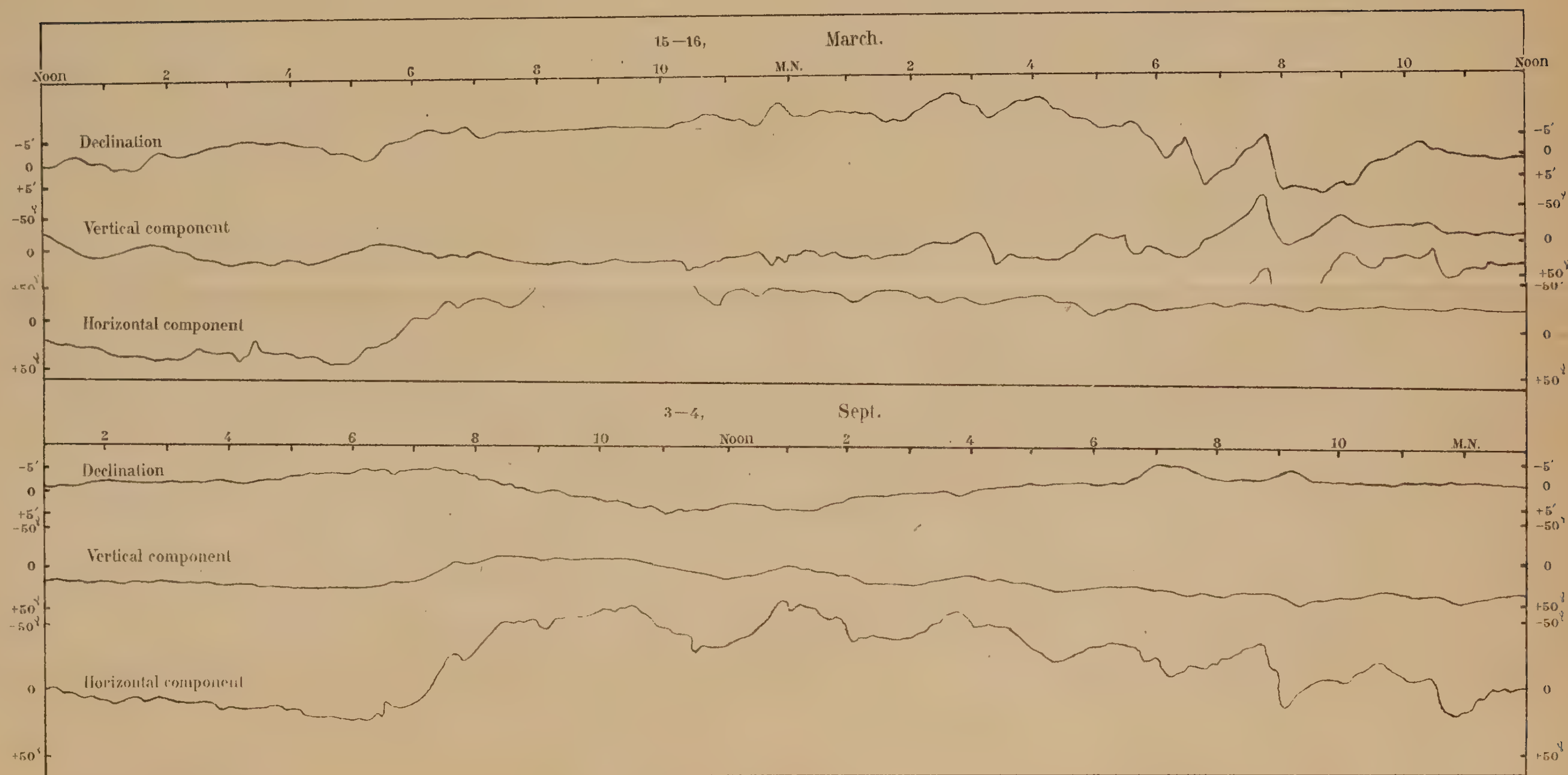


I Div. = $5.\ 10^{-5}$ C.G.S.

PLATE F. IV.

PRINCIPAL MAGNETIC DISTURBANCES

RECORDED AT THE CENTRAL METEOROLOGICAL OBSERVATORY, TOKIO, 1898.

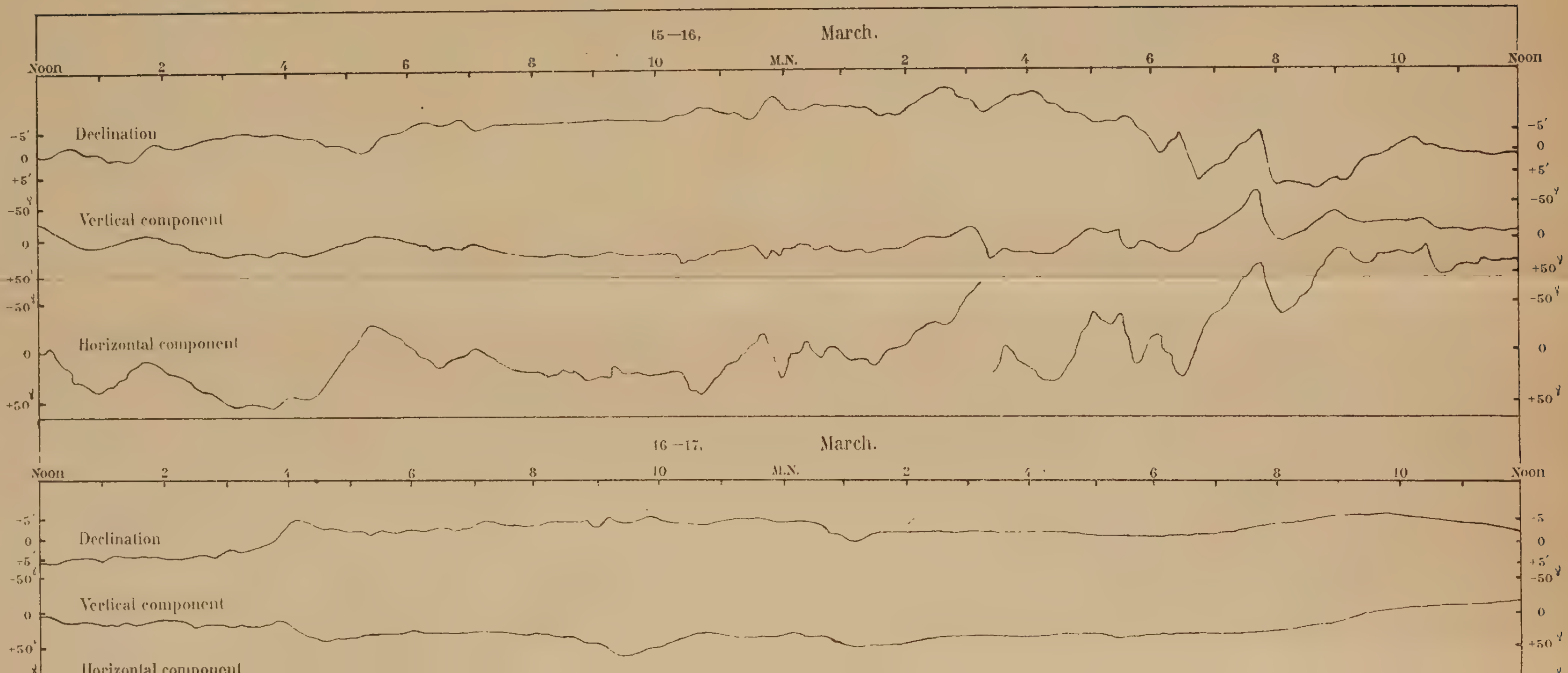


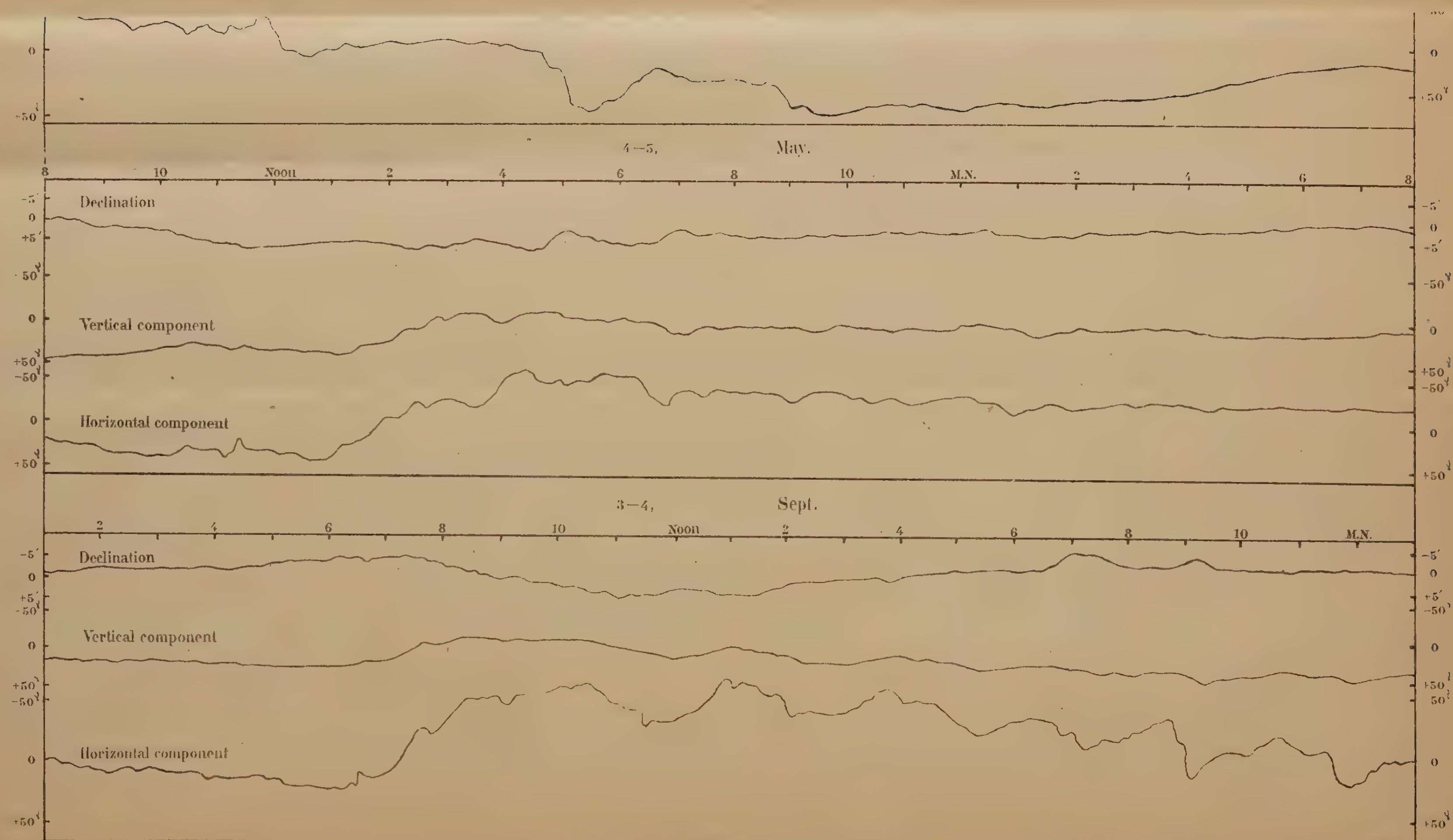
$\gamma = 10^{-5}$ C.G.S.

PLATE F. IV.

PRINCIPAL MAGNETIC DISTURBANCES

RECORDED AT THE CENTRAL METEOROLOGICAL OBSERVATORY, TOKIO, 1898.



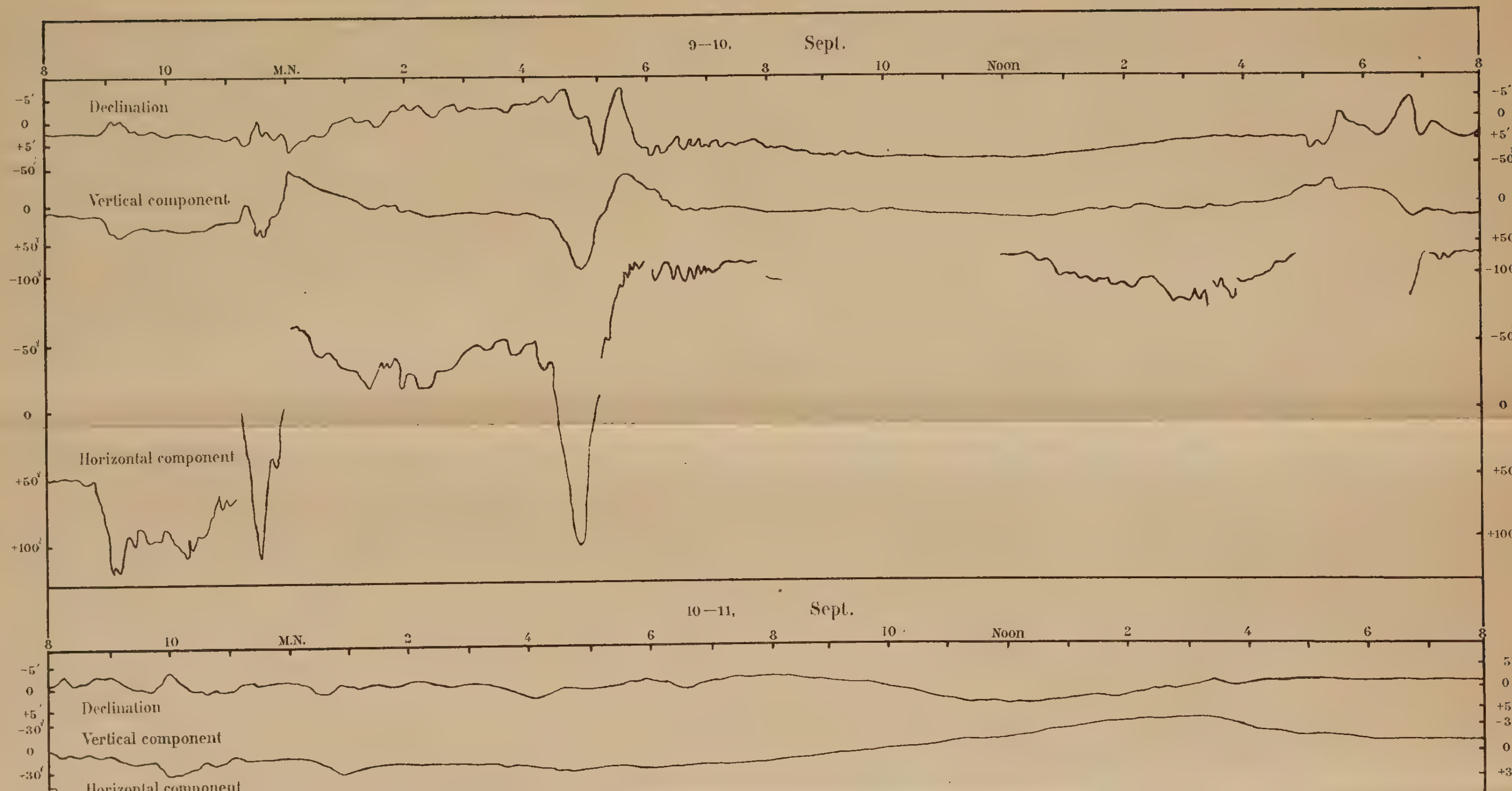

4—5, May.
8
10
Noon
2
4
6
8
10
M.N.
2
4
6
8
Declination
Vertical component
Horizontal component
3—4, Sept.
2
4
6
8
10
Noon
2
4
6
8
10
M.N.
Declination
Vertical component
Horizontal component

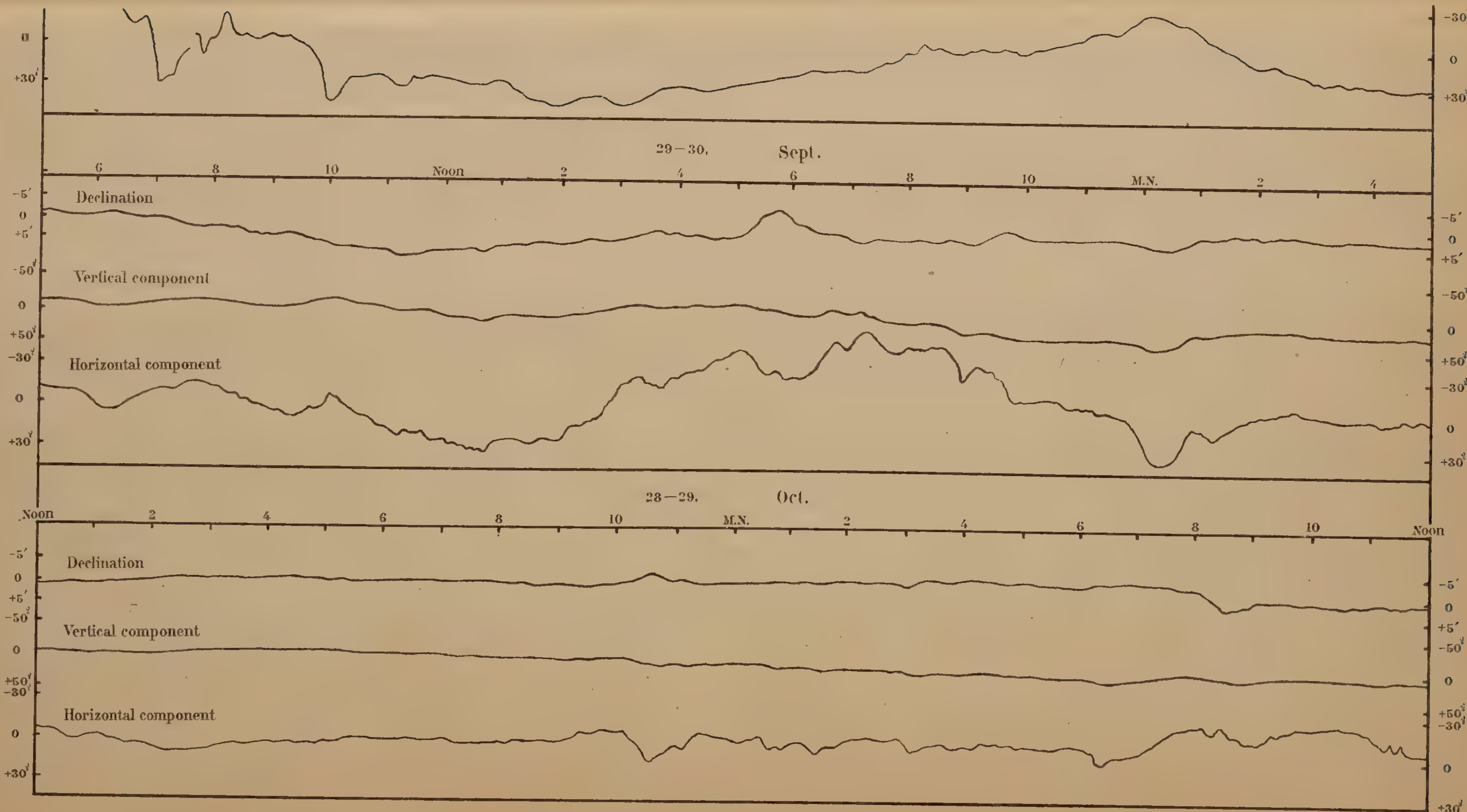
γ = 10^{-5} C.G.S.

PLATE F.V.

PRINCIPAL MAGNETIC DISTURBANCES

RECORDED AT THE CENTRAL METEOROLOGICAL OBSERVATORY, TOKIO, 1898.



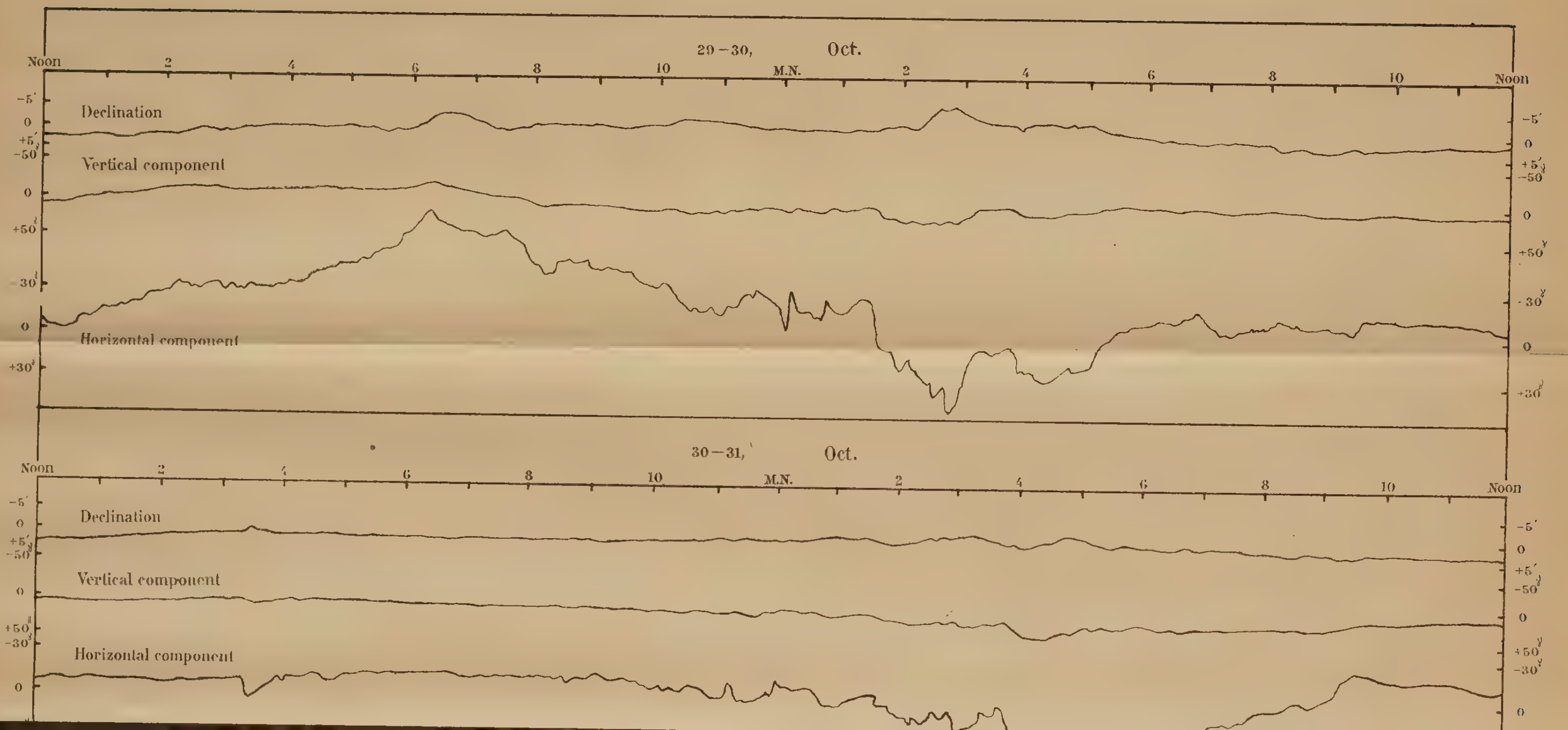


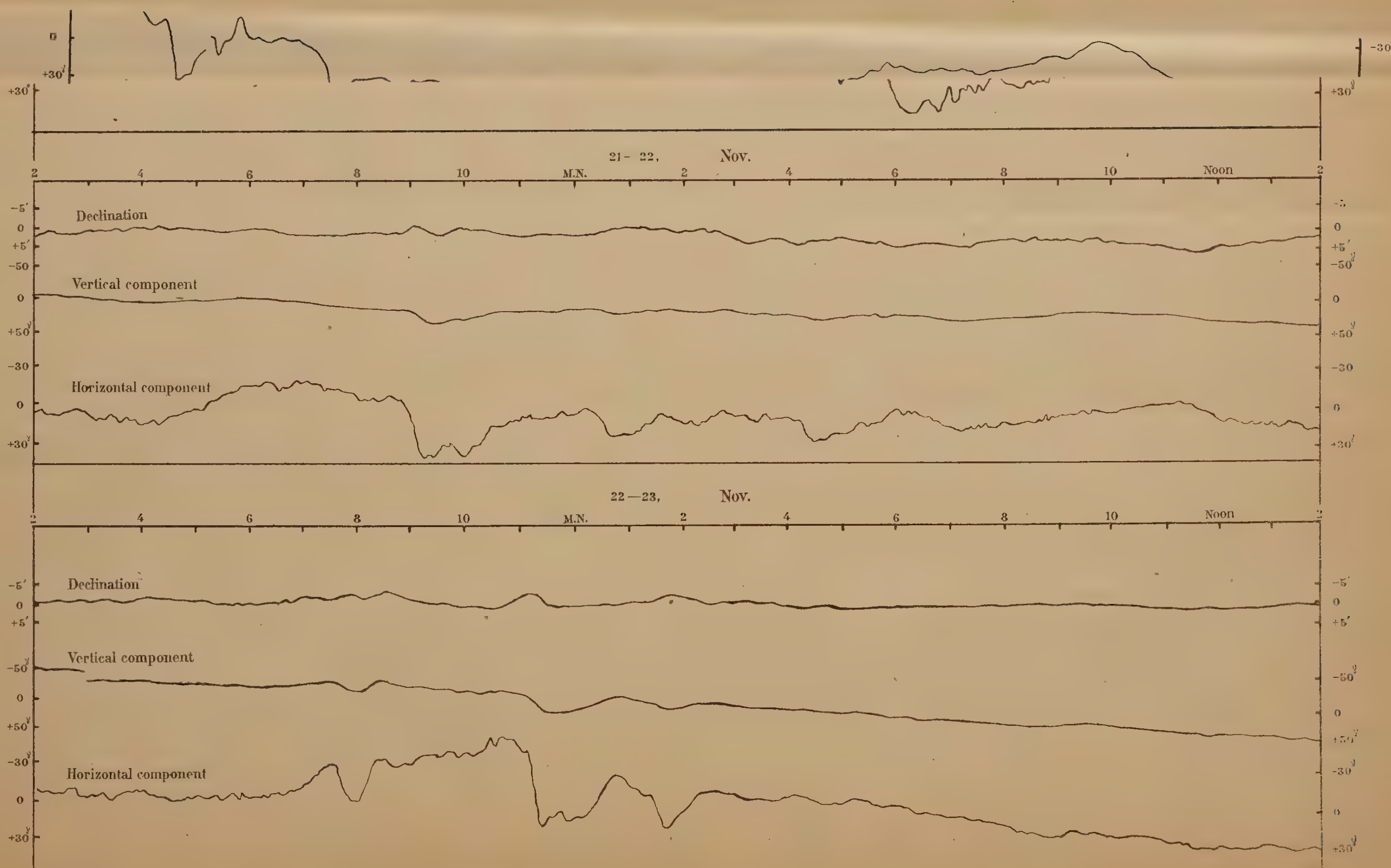
$\gamma = 10^{-5}$ C.G.S.

PLATE F. VI.

PRINCIPAL MAGNETIC DISTURBANCES

RECORDED AT THE CENTRAL METEOROLOGICAL OBSERVATORY, TOKIO, 1898.




21- 22, Nov.
22—23, Nov.
2
4
6
8
10
M.N.
Noon
Declination
Vertical component
Horizontal component
-5′
0
+5′
-50
+50γ
-30
+30γ

γ = 10 $^{-5}$ C.G.S.

OBSERVATIONS

ON

ATMOSPHERIC ELECTRICITY

IN

THE YEAR 1898.

The electric potential of the atmosphere is measured by means of a Thomson-Mascart's self-recording quadrant electrometer. Let us shortly describe the apparatus.

The electrometer is contained in a metal case, on the cover of which is the tube which supports the bifilar suspension, and it allows three electrodes to pass, which are respectively in connection with the quadrants and the needle. Two of electrodes are connected with the pairs of quadrants, their other ends being put in connection with the two poles of a battery formed of 30 or 50 water cells, as the case may be, the middle of which is to the earth. The third is connected to the needle by means of the glass vessel containing sulphuric acid, in which are immersed, on the one hand, a platinum wire attached to the electrode, and, on the other hand, a prolongation (in platinum) of the axis of the needle, having two leaves between the quadrants.

Sir William Thomson's water dropping apparatus is used to collect the atmospheric electricity. It is a cylindrical cistern of copper, placed in the room next to that where the photographic record is taken. The cistern rests on three glass pillars covered with brass, each one projecting from the interior of a glass vessel containing sulphuric acid and the mouth of the vessel being sheltered with a brass-cover so as not to touch it. A pipe of about 2 metres in length projects towards the west from the cistern into the atmosphere, and from a very small hole at its extremity (1.7 m. above the ground) the water splashes out and breaks almost immediately into drops. The cistern is thus brought to the same potential as that of the atmosphere, near the extremity, and this potential is communicated to the needle with a mirror through the third electrode above mentioned. Thus, in accordance with the variation of electric potential of the atmosphere, the mirror is turned about, so that light falling upon the mirror reflects to a photographic paper moving by a clock-work, the fixed line being obtained by the light reflected from the glass window at the front of the electrometer.

Owing to the existence of moisture, the zero point is sometimes changed, and therefore it is recorded two times a day by stopping the water spout and connecting the cistern with the earth. Also, to prevent such an error, the sulphuric acid in the instrument is renewed almost every week.

The sensibility is measured every week by means of a battery formed of 50 cells. The mean value for 1 mm. of the ordinate of the photographic curve was as follows:—

	Volts		Volts
January	2.95	July	1.85
February	3.77	August	2.22
March	4.19	September	2.31
April	2.53	October	2.40
May	2.26	November	3.70
June	2.11	December	1.76

Lastly, it is to be noticed that, since the curve of electric potential of the atmosphere is in general of zigzag nature, the potential is measured by drawing the mean curve.

HOURLY VALUES

OF

ATMOSPHERIC ELECTRICITY

observed at the Central Meteorological Observatory, Tokio,

1898.

Time is given in the Central Standard Time (the mean time of the meridian 135° E).

The electric potential is measured in volts.

Weather conditions are represented by international symbols.

Monthly and annual means are taken using the days of complete record, omitting the days with the sign (*), for the values on the latter do not indicate the normal electric condition in consequence of rain, mist or some other causes.

The sign (±) indicates that the oscillation of potential is so rapid that we can not definitely say whether the potential at the corresponding time is positive or negative, the sign (+) or (−) the value either too hign or too low to be traced on the photographic paper (but the sign (−) before a number means "negative").

The sign ... indicates the want of photographic record, owing to the weakness of the light of lamp, the stopping of clock, etc.

ATMOSPHERIC ELECTRICITY

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p	5p	6p
1*	121	138	141	108	104	108	108	151	161	124	89	55	...	...	134	118	94	106
2*	96	72	3	48	27	79	91	150	94	81	86	74	52	41	44	33	24	27
3*	27	23	22	22	28	32	85	52	69	66	56	37	41	30	7	47	41	61
4*	—	+	+	—	—	31	81	149	166	156	115	93	71	58	47	56	92	102
5	42	33	37	33	41	51	70	58	95	77	78	69	82	52	52	52	65	92
6	55	48	49	62	65	82	68	60	60	73	41	46	60	53	69	78	94	121
7	244	190	48	34	42	56	72	85	51	37	39	51	53	44	47	42	72	100
8	74	63	67	82	132	177	204	240	225	110	77	72	65	58	82	62	69	113
9	89	72	65	67	79	89	157	157	202	134	84	55	83	52	43	38	39	84
10*	100	91	86	105	108	135	242	238	210	193	124	62	...	...	...	...	...	...
11*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	40	32	47	64
14*	—	±	42	24	16	26	30	—	78	65	56	53	46	26	43	55	57	73
15*	145	137	126	133	142	117	113	98	75	40	59	72	68	77	63	—	—	41
16*	82	87	34	11	—	—	—	—	—	—	—	—	14	32	45	48	61	38
17	91	70	55	56	66	87	114	156	109	79	61	50	58	59	54	56	49	38
18	59	50	77	77	70	71	53	81	75	85	47	33	60	50	57	46	73	72
19	92	96	94	77	106	84	99	70	43	43	43	34	8	6	-19	00	14	19
20	51	46	44	44	76	163	212	200	132	68	63	61	54	46	50	48	78	88
21	193	158	154	153	147	154	175	265	273	260	221	139	144	104	35	42	47	109
22	146	141	125	102	95	145	189	202	202	78	40	43	30	30	40	33	45	66
23*	94	77	52	46	—	+	—	—	—	—	—	—	±	—	—	—	—	—
24*	—	±	±	±	+	+	+	+	+	—	—	—	21	8	38	62	83	122
25*	47	28	±	—	—	—	—	—	—	—	—	—	±	±	±	±	±	±
26	47	64	35	37	38	49	70	86	87	77	64	71	55	57	56	66	61	74
27	157	197	240	267	259	216	310	310	310	243	135	127	114	132	147	149	151	157
28*	±	+	+	+	+	+	+	—	—	+	+	+	+	+	+	+	+	+
29	44	46	50	51	57	69	107	99	75	84	78	60	57	36	35	48	66	65
30	82	98	88	121	177	234	217	296	263	211	216	183	196	239	233	263	180	230
31	208	198	169	131	199	193	260	281	293	214	75	56	44	48	36	33	66	110
Mean	104.6	98.1	87.3	87.1	103.1	120.0	148.6	165.4	155.9	117.1	85.1	71.9	72.7	66.6	63.6	66.0	73.1	96.1

ATMOSPHERIC ELECTRICITY

1	52	48	56	42	42	88	121	91	73	50	48	53	40	37	36	55	112	142
2*	47	45	41	48	79	70	106	76	—	—	—	—	—	—	—	—	15	27
3	79	56	67	79	103	152	246	152	97	79	73	65	58	94	105	109	116	83
4	117	119	114	122	131	143	225	230	170	131	68	53	43	58	85	88	116	158
5	113	73	58	59	64	34	61	64	55	52	46	44	56	34	14	24	00	59
6*	42	38	48	59	56	111	153	213	130	106	..	...	35	54	70	60	68	57
7*	38	31	21	23	—	—	±	±	—	—	38	36	58	49	49	73	82	142
8	105	82	79	101	123	204	298	187	147	106	99	75	67	38	69	63	89	99
9	313	242	153	123	151	173	221	203	117	98	84	73	40	68	64	77	79	71
10*	132	118	121	81	70	63	57	66	103	+	+	+	+	+	+	+	+	±
11	63	88	129	120	141	171	286	274	316	187	152	114	95	95	93	123	183	156
12*	75	86	98	110	106	...	...	...	122	124	118	108	77	68	57	55	78	98
13	49	49	62	55	65	65	87	104	110	101	67	57	57	65	61	57	65	95
14	122	170	146	153	151	172	285	314	214	180	142	101	54	46	59	109	147	126
15	228	168	177	159	142	246	209	220	306	228	138	172	93	116	116	142	181	123
16*	115	91	78	71	67	64	75	84	67	93	71	62	...	...	41	52	59	107
17	69	71	67	75	88	135	169	142	86	45	32	30	38	46	49	66	86	111
18*	133	125	152	163	167	205	215	186	160	82	70	65	61	65	47	44	61	—
19*	—	—	—	—	—	±	—	69	75	62	66	58	48	42	46	44	46	52
20	23	22	4	20	26	30	53	32	18	00	00	6	14	102	20	23	37	54
21*	67	81	78	79	103	139	170	123	107	83	65	55	53	44	46	48	63	68
22*	32	68	94	112	+	+	+	+	±	—	—	—	—	—	—	—	16	52
23	43	45	49	57	63	73	224	130	77	73	85	65	41	37	39	16	41	44
24	49	50	59	71	78	91	136	124	74	78	47	29	29	33	45	47	54	74
25*	250	154	75	138	154	204	229	225	325	150	96	48	24	33	51	67	72	88
26*	84	73	56	69	...	...	...	125	82	39	26	24	...	21	-5	-6	30	49
27	95	75	109	89	142	191	240	242	155	60	9	58	58	44	47	44	36	58
28	107	110	101	117	137	203	274	281	224	107	55	46	43	59	53	27	46	53
Mean	101.7	91.7	89.4	90.1	102.9	135.7	195.9	174.4	139.9	98.4	71.6	65.1	51.8	60.7	59.7	66.9	86.7	94.1

(IN VOLTS). *JANUARY, 1898.*

7p	8p	9p	10p	11p	M.N.	Mean	Maximum	h m	Minimum	h m	Range	Remarks
138	144	144	129	124	121	...	175	9.18 a	32	11.30 a	143	●11.00a.-0.05p.
24	16	20	23	27	29	...	165	8.08 a	- 64	3.15 a	229	●1.20-5.25a.
63	27	17	—	—	+	...	96	7.15 a	-156	10.20 p	252	●3.40-4p., 8.03p.-
159	190	207	149	171	88	...	261	9.30 p	-153	0.50 a	414	●-6.30a.
109	127	168	148	150	116	79.0	177	8.23 p	33	2.00 a	144	——
157	218	191	266	249	236	104.2	319	9.25 p	31	10.36 a	288	✱1.20-1.25a. △10.05a.-✱10.35-11.20a. ●0.10-
92	68	63	72	84	101	74.5	272	1.05 a	25	9.50 a	247	✱10.25-10.30a. ⌊0.30p.
202	176	139	129	125	105	118.7	288	8.12 a	29	2.00 p	259	——
146	124	230	162	134	115	104.2	251	8.48 p	36	5.00 p	215	——
...	...	...	...	...	...	...	...	...	...	...	...	——
...	...	...	...	...	...	...	...	...	...	...	...	✱0.30-4.30p., 5.30-6.20p., 9.03p.-●9.25-10.20p.
...	...	...	...	...	...	...	...	...	...	...	...	●0.05p.
53	73	58	36	...	...	...	...	...	...	...	...	●9.50-10.30p., 11.10p.-
98	138	169	175	147	139	...	178	10.10 p	-79	0.05 a	257	●-1.30a., 2.35-2.40a., 3.55-4.50a., 6-6.15a.
108	78	76	72	69	64	...	164	0.50 a	-164	4.00 p	328	●9.40-10.50a., 0.40-1.20p., 2.50-5.05p.
76	153	171	191	181	109	...	+	...	—	...	...	●2.55a.-●✱10a.-●11.30a.-1.25p.
16	42	42	69	65	61	66.8	161	7.45 a	00	8.32 p	161	●6.40p.-
52	43	78	104	92	94	66.6	116	10.35 p	-2	11.18 a	118	●-3.20a., 6.03a.-●✱6.58a.-✱7.55-8.25a.,
41	54	62	60	62	60	52.0	107	2.25 a	-84	3.05 p	191	/1-9p. ⌊●✱10.15a.-●10.50a.-0.30p.
132	178	154	178	253	256	111.5	>268	11.30 p	37	3.24 p	>231	——
142	179	152	157	201	191	158.1	>273	9.00 a	27	3.18 p	>246	——
58	63	98	98	76	87	93.0	>202	8.00 a	18	1.25 p	>184	——
—	+	—	—	—	—	...	+	...	—	...	...	●3.55a.-●✱10p.-✱11p.- ⌈●11.55a.-0.25p.
140	133	102	102	67	65	...	+	...	—	...	...	✱-✱●0.40a.-✱1.30a.-●✱9.50a.-✱10.30a.-●✱11.40a.-
±	±	±	±	24	34	...	+	...	—	...	...	●1a.-●△11.50a.-✱1.20p.-✱●△1.23p.-●△2.35p.-△✱ ⌊4.20p.-✱4.35p.-11.20p. /11a.-1p., 3-5p.
106	106	72	112	59	56	66.9	173	9.40 p	33	5.12 a	140	/5a., 11a.-4p.
174	195	247	264	258	225	207.7	>311	8.00 a	57	0.08 a	>254	——
69	47	44	44	36	42	...	+	...	—	...	...	●0.25-1a., 3.30-8.55a., 1.55-3.35p. ⇱4.39-6.50a.
96	96	126	132	78	75	72.1	141	8.20 p	21	8.28 p	120	/1-5a. ⌊/9p.-M.N.
263	251	257	242	202	296	209.9	>300	6.40 p	74	1.05 a	>226	——
157	79	51	44	60	85	128.7	>296	8.40 a	12	1.10 p	>284	——
121.4	124.9	133.1	139.8	134.2	134.9	107.1	228.4		21.7	-	206.7	

(IN VOLTS). *FEBRUARY, 1898.*

7p	8p	9p	10p	11p	M.N.	Mean	Maximum	h m	Minimum	h m	Range	Remarks
143	115	70	67	34	39	68.9	162	6.10 p	30	2.05 p	132	——
52	61	74	79	52	64	...	141	7.02 p	-145	11.15 a	286	/10a.-5p.
89	84	82	143	106	99	100.7	292	6.50 a	43	0.57 p	249	——
102	188	167	143	185	195	131.3	283	7.25 a	30	1.30 p	253	●11.30-11.40p. ≡p.
40	21	14	15	40	40	45.0	199	0.15 a	-21	4.45 p	220	●1.30-1.35a., 5.50-7.25a., 8.45-10.15a., 2.55-10.45p.
—	—	—	29	25	32	...	219	8.02 a	-156	7.40 p	375	●6.50-10.30p., 11.30p.-
178	264	150	130	86	122	...	290	7.50 p	-218	8.10 a	508	●-2a., 4.30-4.45a., 7.08a.-0.15p., 3.55-6.10p., 11p.-
86	74	135	199	226	206	123.2	377	6.50 a	29	1.58 p	348	●-2.40a., 6.40-7.30p. ≡p.
77	78	85	139	126	139	124.7	320	0.58 a	55	2.15 p	265	≡a. ⌈✱10.10-11.50p.
±	+	+	+	+	+	...	...	...	...	...	...	✱6.05-6.10a., 7.10-✱△6.30p.-✱7p.-✱△9.50p.-
114	91	69	69	72	69	136.2	379	7.10 a	53	0.40 a	326	<p.
134	73	79	83	106	98	...	200	6.35 p	47	3.45 p	153	<p.
158	114	104	91	104	122	81.8	183	6.55 p	41	1.33 a	142	——
230	230	297	339	352	310	185.4	398	7.40 a	31	2.05 p	367	——
95	95	181	147	198	147	167.8	375	9.17 a	69	8.05 p	306	——
89	74	70	71	70	61	...	151	0.00 a	1	2.10 p	150	——
87	97	118	120	169	148	89.3	216	11.20 p	7	11.55 a	209	——
—	—	—	—	—	—	...	224	7.55 a	<-266	6p.-M.N.	>490	●6.30p.-
35	22	23	27	29	28	...	89	8.30 a	<-270	0-8 a	>359	●-7.38a. /8p.-M.N.
70	61	63	66	65	61	36.2	82	7.20 p	-47	9.57 a	129	/10-11a.
81	63	±	—	—	—	...	178	7.00 a	<-198	8p.-M.N.	>376	●7.55p.-✱11.40p.-
64	44	44	44	46	48	...	...	...	...	...	...	✱-△6.05a.-△●6.45a.-●△✱7.40a.-●,△7.55a.-
55	53	57	70	69	43	64.7	291	7.30 a	9	4.15 p	282	/2p., 4p., 6p. ●915a.-●△10a.-●Noon-5.45p.
134	144	148	165	231	190	90.8	325	10.52 p	28	11.55 a	297	—— ⌊/11a.-4p.
88	73	92	125	...	...	...	350	9.07 a	21	0.35 a	329	——
107	86	75	77	69	69	...	...	...	...	...	...	<a. /9a., 11a.
83	75	84	107	129	104	97.2	360	7.55 a	7	11.05 a	353	——
80	83	94	137	162	197	116.5	375	6.05 a	16	3.55 p	359	——
102.7	100.2	110.5	126.1	141.7	131.8	103.7	288.6		23.7		264.8	

ATMOSPHERIC ELECTRICITY

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p	5p	6p
1*	150	150	143	160	258	146	132	94	±	±	±	±	—	—	±	9	52	73
2	29	34	29	43	48	58	72	41	34	13	22	48	63	43	27	51	55	36
3	45	79	70	74	94	148	216	236	154	124	72	67	50	17	30	60	65	89
4	46	41	53	18	28	59	33	31	43	43	46	41	46	94	110	92	71	79
5	29	44	63	55	73	128	183	183	110	78	50	21	5	-3	-8	10	26	37
6	43	48	54	59	83	145	225	204	134	89	13	27	24	11	11	27	24	54
7	25	22	36	38	47	82	93	11	11	11	23	5	16	14	27	27	52	66
8*	105	136	142	114	136	179	216	256	221	125	102	258	...	...	...	...	...	...
9*	73	114	97	82	61	82	82	53	29	-3	-35	-17	-6	-6	17	00	3	-12
10*	+	-12	36	27	36	24	-18	114	102	69	36	48	48	36	45	48	54	63
11	103	97	106	94	97	131	131	119	94	91	78	128	112	55	53	66	59	62
12*	71	61	57	57	64	59	143	93	61	12	25	7	...	...	...	...	...	...
13*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	31	42	-10
15	31	42	52	56	62	88	108	81	54	31	38	42	40	33	27	13	-85	19
16	48	38	50	38	80	107	150	117	77	50	34	46	80	52	46	34	69	38
17*	102	154	192	...	...	...	...	62	106	88	73	65	35	19	27	27	11	15
18*	00	00	8	25	15	58	19	-73	-44	-96	-4	-273	...	...	...	00	27	35
19*	29	50	46	50	42	77	96	73	77	58	27	11	15	13	31	00	31	35
20*	-62	-23	8	31	65	54	115	88	65	58	62	73	31	19	33	23	35	58
21*	54	69	...	...	...	...	...	...	...	...	...	...	36	00	+	±	8	11
22	15	35	8	212	36	73	90	71	77	65	38	23	23	15	42	23	11	38
23*	50	54	58	50	69	161	196	188	173	107	54	46	27	00	-23	±	±	±
24	38	38	72	50	73	100	134	42	92	58	56	54	48	111	100	88	84	82
25	104	119	159	61	76	119	61	69	104	81	65	61	44	35	19	23	24	45
26	41	57	65	63	69	109	166	166	71	27	19	32	24	00	5	14	8	27
27*	139	130	100	101	136	168	191	150	85	-5	24	...	35	38	18	41	-5	27
28	53	41	38	22	33	42	60	44	30	38	18	8	31	44	22	19	35	45
29	90	93	106	112	117	139	153	150	127	91	83	80	41	52	44	42	34	19
30*	53	48	72	109	90	145	131	66	95	38	14	7	12	32	-19	-5	-23	-93
31*	3	14	—	22	37	63	46	30	34	12	-12	19	+	+	+	22	52	60
Mean	49.3	51.9	64.1	66.3	67.7	101.9	125.0	104.3	40.8	59.3	43.7	45.5	43.1	38.2	37.0	39.3	35.5	49.1

ATMOSPHERIC ELECTRICITY

1*	106	74	55	30	60	104	—	-5	-5	16	...	...	17	25	35	52	52	52
2*	48	35	39	54	67	79	55	83	69	22	2	15	15	-6	-29	-110	21	12
3*	13	17	10	9	12	34	87	6	34	30	27	7	—	—	—	—	—	19
4	26	21	25	29	46	73	68	56	35	35	31	31	31	27	29	35	31	39
5*	—	—	—	±	—	—	77	—	—	—	—	—	+	—	15	+	+	29
6*	103	88	75	70	95	138	131	120	82	67	69	56	±	—	+	+	30	73
7	115	96	87	72	70	131	100	74	59	48	47	44	37	26	26	33	44	33
8	77	64	66	64	80	86	68	51	26	21	18	15	14	22	15	17	44	57
9*	52	45	47	36	36	67	72	76	56	51	43	45	...	...	...	...	...	...
10*	...	...	...	...	...	...	...	...	...	...	...	...	37	30	25	18	17	11
11	-9	7	21	16	35	52	42	32	35	39	39	30	18	7	-12	16	32	39
12	117	108	94	85	99	132	150	120	92	56	49	45	37	38	40	49	55	59
13	95	97	100	100	112	131	128	100	62	36	24	17	26	23	23	28	31	33
14	83	89	89	90	94	103	72	61	42	50	64	47	25	25	22	14	6	6
15	79	94	81	75	78	83	78	56	56	72	67	58	28	31	25	28	31	25
16*	47	53	53	56	53	67	72	33	3	-39	-31	-14	...	...	...	...	+	±
17*	47	64	67	58	47	83	81	75	64	60	47	44	...	6	46	29	50	75
18	49	47	42	42	60	78	58	36	22	28	22	28	00	6	6	6	11	12
19	60	67	75	67	81	90	106	83	67	75	42	31	28	36	44	42	43	56
20*	111	125	136	161	182	164	136	125	126	92	67	19	-22	±	31	44	58	67
21*	57	61	28	25	36	56	81	53	47	47	33	—	...	-33	-17	±	10	8
22*	29	31	71	25	42	58	75	86	72	50	33	11	±	±	5	4	20	34
23*	114	131	98	88	108	128	131	121	84	37	±	...	59	50	49	63	79	74
24*	55	58	95	101	...	...	...	...	...	...	...	...	—	—	—	±	10	18
25	87	42	26	16	58	55	34	17	5	-5	-3	10	45	45	47	45	32	21
26	42	42	39	51	74	110	116	103	63	58	46	39	29	21	29	45	60	74
27	118	95	84	84	95	131	137	87	63	39	35	26	10	21	28	26	29	39
28*	126	100	105	95	97	126	121	84	79	58	...	...	±	—	—	±	±	—
29*	—	-4	±	5	5	8	8	7	5	5	5	10	4	-3	-8	-5	8	18
30*	37	32	30	33	42	34	24	16	13	5	±	±	±	13	8	3	3	8
Mean	72.2	66.8	63.8	60.8	75.5	96.5	89.7	67.3	48.2	42.5	37.0	32.4	25.2	25.2	24.8	29.5	34.5	37.9

(IN VOLTS). *MARCH, 1898.*

7p	8p	9p	10p	11p	M. N.	Mean	Maximum		Minimum		Range	Remarks
								h m		h m		
84	19	-23	-8	9	21	...	...	...	...	...	...	╱11a., 1-4p., 9p.-
48	121	70	65	00	46	45.7	140	8.20 p	-72	10.35 p	212	●7.35p.- △10p.- ●10.20-11.50p. ╱-3a.
94	144	122	97	60	40	93.6	258	8.05 a	14	2.30 p	244	●M.N.- [7.45-8.20p., 9.50p.-△11p.-
76	56	69	64	59	31	55.4	158	2.35 p	-56	11.30 p	214	●-1a., 2.50a.-△3.25a.-✱5.45-9.50a., 1.30-5.50p.,
26	26	53	76	50	42	56.5	203	7.10 a	20	2.25 p	183	△-0.30a. ✱0.45-4.20p., 5.10-5.40p. △8.45p.-
83	48	70	83	51	46	69.0	241	7.10 a	-10	2.45 p	251	△-0.30a., 2.40-3.20a.
85	99	261	126	82	77	55.7	280	9.00 p	-33	8.20 a	313	——
...	131	71	62	57	54	...	681	1.30 p	34	7.30 p	647	╱1-4p., 7-8p.
12	—	—	+	+	+	...	451	11.30 p	<-427	8.50 p	>878	●9.25p.-✱●9.35p.-✱11.45p.-, ╱8a.-Noon.
87	117	99	129	150	111	...	165	11.30 p	-51	6.50 a	216	✱-2.20a., 6-7.15a.
61	41	36	53	55	41	81.8	157	6.15 a	3	7.25 p	154	——
...	...	...	...	...	...	...	...	...	...	...	...	——
...	...	...	...	...	...	...	...	...	...	...	...	✱△0.50a.-△✱2.10a.-✱3.30a.-✱△4.10a.-✱6.15a.-
15	31	8	23	00	27	...	...	...	...	...	...	╱Noon [✱△7.40a.-△●8a.-2.25p.
42	58	69	35	31	23	41.2	104	7.00 a	-84	5.00 p	188	——
111	119	84	88	111	182	77.0	211	7.20 a	19	10.40 p	192	●1a.-△1.55-2.07a., ✱3.55-4.25a., 5.45-9.300a. △10.25-11.50a.
35	54	65	23	11	-19	...	192	5.00 a	-26	11.50 p	218	≡a. [●10.50-11.50a., 3.40-4p., 7.03-9.10p.
8	38	115	92	54	35	...	139	9.15 p	<-308	11.30 a	>447	●2.35a.-4.03p., 6.30p.- [4-4.15p., 5.50p.-
15	-115	31	-11	-162	-42	...	119	7.15 a	-161	11.00 p	280	●-2.40a., 3.50-4.20a., 6-7.50a., 11.55a.-1.20p.,
65	10	42	54	88	104	...	127	7.00 a	-142	0.45 a	269	●-3.33a., 4.40-10.45a., 7.30-8.30p.
38	46	46	42	38	19	...	107	3.15 p	-61	3.30 p	168	●3.05p. ╱6p., 11p.-
52	46	63	96	62	54	52.8	134	9.25 p	-30	0.35 a	164	△3-4.10a., 6.05a. ╱-5p.
+	+	123	61	58	58	...	307	7.00 p	-246	4.40 p	553	△●2.55p.- ●3.10p-●△3.25p.-●5.10p.-
90	88	106	111	111	96	80.1	142	6.55 a	-3	7.35 a	145	●-1.15a., 5.50-6.35a., 7.25a.-
45	37	45	43	43	44	63.6	152	2.50 a	15	4.35 a	137	●-1.30a. ≡a.
34	82	109	150	164	145	68.0	193	7.45 a	00	2.00 p	193	●11.40a.-Noon.
41	55	63	35	57	55	...	212	7.10 p	-38	11.35 a	250	——
49	37	19	24	35	63	35.4	70	7.00 a	00	8.15 a	70	●5-9a., 9.50-11a., 4.20p.-
37	46	65	79	98	79	82.4	169	6.55 a	-17	5.20 p	186	●-0.20a.
20	61	48	35	24	00	...	169	3.30 a	-122	6.15 p	291	●5.15-5.30p.
55	49	52	67	49	82	...	131	6.30 a	-120	2.05 a	251	●3.45-4.25p., 9.30-10.20p., 11.40p.-
62.2	69.9	82.7	79.3	67.5	67.3	63.9	174.1		-15.6		189.7	

(IN VOLTS). *APRIL, 1898.*

7p	8p	9p	10p	11p	M. N.	Mean	Maximum		Minimum		Range	Remarks
								h m		h m		
58	56	54	56	64	71	...	134	1.30 a	<-131	7-9 a	>265	●-10.50a.
-8	11	12	15	4	9	...	96	7.25 a	-79	3.40 p	175	●11.05a., 3.25-5.30p.
27	60	91	123	125	104	...	146	10.30 p	56	8.25 p	90	●0.55-3.20a., 4.30a-7p.
50	78	85	68	37	42	43.2	89	9.18 p	16	2.09 p	73	●10.50p.-
57	80	92	108	88	97	...	110	10.20 p	-158	9.10 a	268	●-8.30p., 9.20p.-
107	140	159	198	185	144	...	215	9.10 p	-39	1.48 p	254	●-1a., 11.55a.-4.10p. ≡a., p.
35	52	102	118	111	95	69.0	163	0.25 a	15	2.12 p	148	——
62	68	54	55	53	40	47.4	99	5.18 a	9	1.20 p	90	●9.35p.-
...	...	...	...	...	...	...	124	6.25 a	22	6.00 a	102	●-6.10a., 1.30-4.30p., 5.40p.-
4	20	30	45	24	-6	...	62	0.15 p	-7	6.10 p	69	●-4.40a., 5.45a.
44	46	60	78	92	101	35.8	104	11.12 p	-39	0.02 a	143	╱1-2a.
59	52	54	87	89	92	77.4	162	6.18 a	26	1.00 p	136	——
33	44	61	68	72	75	63.3	135	6.30 a	-55	11.30 a	190	——
19	25	11	67	69	75	52.0	114	4.30 a	00	5.20 p	114	≡a.
24	25	19	25	31	44	50 5	106	1.42 a	6	8.24 p	100	——
8	14	22	36	51	44	...	156	4.10 p	-94	10.30 a	250	T0.47p.- K1.10-2.30p., ●0.30-5.00p.
±	...	4	19	31	37	...	111	6.12 a	-64	6.24 p	175	T4.53-5.20p. ●7.20-8.40p. <p. ╱1p.
28	36	44	49	44	61	34.0	106	7.15 a	-25	2.12 p	131	●9.55-10.10a. T4p.-K4.11p.-T4.35-5.10p.
64	94	108	111	99	101	69.6	125	9.42 p	19	0.40 p	106	—— [●4.25-4.57p.
58	42	50	58	58	58	...	200	4.56 a	-39	1.20 p	239	≡a. ╱1-3p.
-14	-33	-17	—	—	25	...	89	7.18 a	-103	11.50 a	192	●1.50-4.15a., 6.26-10.51p., ╱1-4p., 8.10p.
47	63	84	131	105	113	...	150	9.48 p	-53	3.11 p	203	╱2-6a.
72	87	142	193	154	88	...	200	9.54 p	-10	10.48 a	210	●10.40p.
42	126	145	134	84	66	...	176	9.30 p	-110	1.30 p	286	●-5.25p., 6.55-7.15p., 9.30-10.25p.
13	21	29	66	42	29	32.4	124	0.48 a	-53	7.12 a	177	●2.34a.-1p. 3.50-4.05p., 6.55-7.10p.
76	79	87	100	108	133	67.7	163	6.42 a	8	1.28 p	155	——
53	80	95	87	92	113	69.5	163	6.42 a	7	1.00 p	156	——
—	—	—	—	—	—	...	145	6.30 a	-121	6.00 p	266	●10.35a.-0.50p., 1.45p.-, ≡a.
32	34	32	45	37	37	...	55	7.42 p	-47	1.00 a	102	●-5.50a.
21	42	60	71	76	79	...	87	11.06 p	0	Noon	87	——
43.1	53.8	62.2	75.3	72.2	77.0	54.7	130.3		-34.8		165.1	

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p	5p	6p
1	84	79	76	84	92	118	134	86	55	51	63	58	25	16	13	13	26	50
2*	79	81	89	–	±	+	+	9	13	21	31	24	34	5	20	24	29	28
3	6	5	29	55	73	73	68	63	55	41	24	5	3	4	9	7	34	50
4	89	87	88	79	67	39	38	45	13	5	1	4	4	5	8	14	17	29
5	47	47	37	50	82	114	81	24	14	11	8	00	-8	00	23	34	42	53
6*	49	46	58	50	74	97	79	57	50	79	60	29	...	...	...	...	...	...
7*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
8*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13*	...	...	...	...	...	...	...	...	...	...	...	...	19	22	30	36	51	69
14	121	58	102	129	177	216	148	73	21	00	9	44	37	33	28	23	23	29
15*	101	99	95	97	141	163	156	112	64	44	29	21	00	–10	2	15	33	...
16*	30	34	46	73	106	144	150	75	...	...	46	112	85	94	97	106	114	124
17*	27	23	13	11	17	23	20	17	15	13	8	2	3	–8	2	00	–3	9
18*	—	—	6	16	19	31	—	—	—	—	—	—	...	...	...	...	...	...
19*	77	89	96	87	62	...	...	17	10	10	...	...	67	94	106	89	89	131
20*	85	116	146	214	237	231	202	161	140	119	106	102	102	127	144	119	...	21
21	86	69	52	44	37	29	22	12	-4	–14	2	22	30	46	53	27	71	116
22*	92	96	100	110	154	215	171	92	69	46	22	36	73	37	9	1	14	±
23	62	67	73	89	162	139	119	106	46	00	-52	-60	–12	4	14	18	28	54
24*	100	133	109	125	158	187	210	229	239	166	104	75	...	...	...	...	...	...
25*	...	...	...	...	...	...	...	...	...	...	38	17	42	25	32	49	71	77
26	139	114	102	114	193	214	175	152	135	108	75	81	56	40	25	44	52	62
27*	110	158	+	+	+	+	+	220	193	171	123	112	7	–19	–32	–32	–19	00
28	37	50	62	83	131	144	129	104	64	42	50	57	21	44	73	106	92	67
29	198	181	133	137	179	218	250	181	144	123	98	89	62	60	77	113	114	106
30	102	92	82	75	100	146	108	62	69	52	25	12	–46	7	15	17	9	–3
31	26	41	52	62	166	191	119	61	35	27	79	60	23	25	–20	00	27	46
Mean	83.1	74.2	74.0	83.4	121.6	136.7	115.9	81.0	53.9	37.2	31.8	31.0	16.3	23.7	26.5	34.7	44.6	54.9

1*	79	62	73	68	98	120	60	39	8	2	23	5	15	12	00	6	20	44
2*	2	12	13	13	59	109	123	96	31	34	...	...	7	28	41	35	38	53
3	55	37	6	28	47	17	26	43	47	23	17	36	-4	-27	-20	-8	-20	2
4	59	65	72	46	57	77	102	118	70	46	43	66	54	26	30	26	23	38
5*	60	16	00	17	-53	-115	-118	-79	-4	-28	-4	-15	-12	-10	±	-66	-40	-26
6*	00	00	00	2	11	13	4	00	00	6	00	2	11	14	20	27	8	14
7	18	27	44	72	93	115	92	67	52	39	33	27	27	30	22	23	30	43
8	58	63	71	98	150	179	135	109	100	81	61	64	27	37	28	11	38	56
9*	57	58	62	75	94	143	87	48	39	13	-31	-8	...	...	...	...	...	...
10*	59	62	64	77	115	160	129	107	71	...	...	...	...	...	...	...	...	...
11*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	25	27	24	31
14	41	40	36	35	78	68	50	36	31	24	15	19	16	15	21	39	25	1
15	45	25	38	50	80	79	67	86	64	70	64	48	36	25	23	12	13	39
16	48	62	74	83	100	119	122	72	65	33	33	21	24	27	41	39	36	41
17*	62	53	56	62	93	122	108	84	62	43	37	19	14	8	19	31	43	14
18*	—	-45	—	-6	00	51	59	13	4	6	00	00	00	00	00	...	12	00
19	103	132	108	101	91	57	24	8	8	11	11	16	11	15	16	10	7	8
20	45	45	41	60	76	96	79	39	33	31	37	36	7	6	8	14	19	26
21	70	67	66	83	108	85	78	78	52	72	40	34	21	13	7	11	7	26
22	15	19	18	22	30	41	30	23	22	22	19	17	19	19	17	12	13	32
23	55	49	49	57	102	110	95	55	29	40	75	57	49	44	44	33	34	53
24	72	94	138	117	144	196	214	157	65	31	45	34	45	43	34	37	52	75
25*	23	37	48	44	32	23	14	10	7	5	1	1	3	2	3	5	7	9
26*	3	3	5	6	7	5	5	4	2	00	3	3	00	00	00	00	00	-1
27*	7	00	00	3	12	20	34	36	21	13	5	00	11	7	4	13	38	45
28	61	59	49	37	44	95	95	68	45	32	24	5	-3	-2	21	24	31	41
29	47	53	33	24	69	107	70	34	18	9	19	30	24	25	39	32	46	55
30*	68	78	101	92	92	103	117	76	39	21	23	28	25	22	22	30	...	51
Mean	52.8	55.8	56.2	60.9	84.6	96.1	85.3	66.2	46.7	37.6	35.7	34.0	23.5	19.7	22.1	21.0	23.6	35.7

(IN VOLTS). *MAY, 1898.*

7p	8p	9p	10p	11p	M. N.	Mean	Maximum	h m	Minimum	h m	Range	Remarks
59	63	92	92	97	90	67.3	143	6.35 a	5	3.25 p	138	——
20	5	7	20	24	10	...	91	0.01 a	-72	3.35 a	163	● 2.55-8.20a., 9.05.–
71	79	64	72	63	87	43.3	99	10.30 p	-29	0.50 a	128	● -5p.
39	53	49	45	51	50	38.3	105	3.05 a	- 3	10.40 a	108	≡a.
57	62	51	42	51	47	40.4	125	5.30 a	-18	1.20 p	143	——
...	...	...	...	...	...	...	...	...	...	...	...	≡a.
...	...	...	...	...	...	...	...	...	...	...	...	● 11-11.20p.
...	...	...	...	...	...	...	...	...	...	...	...	● 0.20-2a., 1-3.15p., 4.55p.-
...	...	...	...	...	...	...	...	...	...	...	...	● -0.20p., 1.06-1.45p., 2.30-2.48p.
...	...	...	...	...	...	...	...	...	...	...	...	——
...	...	...	...	...	...	...	...	...	...	...	...	● 5.35-6.20a., 8.15-9.30a., 10.30-10.50a. <p. / 4p.
...	...	...	...	...	...	...	...	...	...	...	...	/ 11a.-Noon
71	73	67	40	44	92	...	...	...	...	...	...	● 4.30-5.23p., 6.03p.-, / 1-3p.
40	59	75	82	85	93	71.0	252	6.05 a	-25	9.10 a	277	● -2.25a., 8.30a., 2.55-4.35p.
23	21	19	21	22	28	...	191	6.10 a	-42	1.40 p	233	——
119	98	89	73	54	29	...	294	6.25 a	35	0.30 p	259	/ 1p.
46	69	—	—	±	—	...	77	7.25 p	-114	8p-M.N.	191	● 8.05p.-
...	...	62	62	57	62	...	...	...	...	...	...	● -2.40p., 5-6.15p., 8.35-9.10p., 11p. / 11a.
123	98	110	177	187	85	...	206	10.10 p	...	...	...	——
25	25	28	37	46	67	...	257	3-6 p	-17	9.50 a	274	≡a. / 10-11p.
135	123	92	71	69	77	52.8	224	7.40 p	-14	10.00 p	218	● 3.50-5.40a., 6.45-10.45a., 4-4.15p. / 2-3a., 5-7a.
—	—	22	37	50	58	...	233	6.25 a	—	...	...	● 5.55-7.40p.
75	85	94	85	77	83	56.5	203	5.10 a	-83	10a-1p	286	——
...	...	...	...	...	...	...	...	...	...	...	...	● 11.45a., 1.55-9.35p. ≡p.
100	68	71	83	100	141	...	...	...	...	...	...	≡a.
73	125	137	85	114	102	104.9	235	5.37 a	8	3.05 p	227	——
8	12	23	12	8	19	...	>260	3-8 a	-85	1.55 p	>345	≡a., ● 11.10p.-, / 3p.
73	87	81	100	135	148	82.5	160	5.05 a	4	0.35 p	156	● -0.35a., 2.07-2.45a., 5.15-6.50a.
125	127	102	81	92	102	128.8	264	7.00 a	-46	0.45 p	310	——
-6	7	40	56	79	31	47.1	163	5.55 a	<-96	11a-1p	>259	● 7.55-8.45a., 9.50a.-4.25p., 5.35-6.05p.
62	69	77	96	127	69	63.5	223	5.35 a	...	...	...	/ 4p.
66.9	78.2	79.5	75.6	86.7	81.6	66.4	177.5		-27.0		204.5	

(IN VOLTS). *JUNE, 1898.*

7p	8p	9p	10p	11p	M. N.	Mean	Maximum	h m	Minimum	h m	Range	Remarks
8	-21	16	-51	-80	-27	...	135	6.15 a	<-106	11p-M.N.	>241	● 8.15-8.35p., 9.45-11.15p. ⊤p.
46	49	49	50	49	77	...	144	6.13 a	-28	0.08 a	172	——
2	10	18	50	20	39	18.5	81	0.06 a	-34	1.48 p	115	● 5.10a.-0.20p., 2.35-3.30p., 6-10p. [5-9.20p.
37	40	8	55	47	36	51.7	143	1.30 a	<-30	8.16 p	>173	● 0.55-2.40a. ≡4.35a. ● 5.45-8.10a., 1.03-1.50p.,
00	00	4	2	00	00	...	79	0.42 a	<-145	6-7 a	>224	● 0.55a.-8.15p. / 5-6p., 8-9p.
32	-23	-11	4	14	14	...	55	7.08 p	-50	7.36 p	105	● 7.40-7.50p., 8.32-11.15p.
55	67	75	74	74	69	52.8	130	6.06 a	14	0.06 a	116	——
57	58	52	50	54	57	70.6	209	6.00 a	11	4.21 p	198	≡a.
56	81	79	69	54	54	...	162	6.00 a	-46	11.06 a	208	——
...	...	...	...	...	...	...	164	5.30 a	46	8.40 a	118	——
...	...	...	...	...	...	...	...	...	...	...	...	● 0.55-9.30a., 10.50-11.25a., 0.05-3.25p., 8.37-, <p.
...	...	...	...	...	...	...	...	...	...	...	...	● -2.20a., 3.10-6.30a., 8.20-9.30a.
43	36	29	39	39	35	...	62	10.03 p	- 3	4.33 a	65	● 1-2.30a., 3.10-10.25a.
43	-8	10	27	27	37	30.2	132	5.12 a	-14	7.46 p	146	● 6.40-8.10p., 10.50p.–
40	42	48	54	72	46	48.6	112	5.15 a	- 2	5.00 p	114	● -2.40a., 4.06a.
40	33	33	40	37	51	53.1	151	7.00 a	-19	9.51 a	132	——
21	-11	-4	-3	-4	-12	...	129	6.00 a	-31	6.24 p	160	● 3.40p.– [5.30p. ≡p.
4	12	26	49	71	77	...	85	11.24 p	<-83	N.-3 a	>168	● -2.20p., 3.25-4.53p. ⊤3.58p.-K4.15p.–⊤4.38-
13	34	20	34	47	49	38.9	154	1.51 a	00	4.18 p	154	≡a. ● 7.40-10.10a., 7.48-8.30p.
23	31	52	37	52	74	40.3	114	6.12 a	4	1.30 p	110	● 7.42-7.55a., 6.20-8p. ⊤p.
34	39	43	32	19	15	45.8	117	4.29 a	00	3.24 p	117	● 6.15-10.35a., 2.55-3.40p., 5.43-5.50p.
35	43	40	49	50	56	27.6	56	9.18 p	6	4.48 p	50	● 10.35-Noon.
14	89	93	88	80	71	61.0	121	6.00 a	10	9.51 a	111	——
73	49	-13	13	-16	13	71.3	238	7.18 a	<-81	8.00 p	319	● 7.15a.-, ≡a.
7	5	3	2	2	3	...	67	3.30 a	2	10.00 a	65	● -4.20a., 11.30a.-1.10p., 3.55-6.50p., 7.50p.-, / 5p., [7p., M.N.
-2	00	3	1	00	7	...	10	4.06 a	-15	10.39 p	25	● -2.40a., 5.55-11.25a., 1.35-9.20p. / 3a. ≡p.
55	73	72	54	41	50	...	81	8.24 a	00	2.00 a	81	● 0.40-2.30a., 3.25-5.10a. ≡a.
1	39	34	46	51	44	40.9	122	6.39 a	- 9	1.42 p	131	● 6.50a.-3.30p., 5.30p.
7	53	49	51	47	52	43.5	131	6.09 a	7	10.16 a	124	≡a.
93	-14	-1	52	62	65	...	138	6.54 a	<-32	4-9 p	>170	● 7p., 7.50-8.10p. ⊤p. ≡a.
37.6	41.3	37.5	46.7	4.1	47.3	46.3	134.1		<-6.6		>140.7	

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p	5p	6p
1*	69	77	83	99	166	159	122	92	41	26	29	34	...	...	...	...	...	...
2*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	-22	39	16
3*	74	75	76	71	106	129	59	46	44	41	25	7	...	...	00	5	9	19
4*	62	64	53	62	...	...	...	28	25	9	5	5	14	15	9	13	21	29
5*	51	48	83	115	122	125	131	97	67	52	53	46	...	...	...	...	...	...
6*	6	6	7	2	5	99	5	00	3	00	16	18	17	16	55	44	31	41
7	29	17	9	9	2	-2	-5	00	6	9	2	2	1	3	2	6	14	15
8*	48	62	62	60	69	80	83	25	22	30	41	52	33	40	53	63	44	19
9*	-6	-4	-1	00	7	13	16	14	11	5	...	...	53	70	78	80	80	80
10*	77	78	74	76	106	138	145	90	77	70	60	57	37	38	29	25	39	±
11*	22	44	41	42	69	93	69	57	48	37	±	±	69	55	52	54	59	69
12*	76	75	79	83	90	91	94	101	93	86	82	55	...	...	...	...	...	...
13*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15*	...	...	...	...	...	...	...	...	...	...	...	...	27	24	22	24	26	31
16	73	62	57	55	57	67	73	60	46	44	37	27	26	25	27	31	35	36
17	40	64	64	77	97	115	127	126	83	71	64	50	29	22	19	21	16	13
18	26	24	24	27	30	30	26	17	14	12	11	13	23	14	13	22	31	40
19	33	12	19	32	62	81	88	79	44	38	40	42	35	35	40	46	43	44
20*	29	27	26	35	74	104	103	57	42	42	41	46	...	...	...	...	...	...
21*	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...
22*	...	...	...	...	...	...	...	...	...	...	...	...	5	00	00	3	4	10
23	27	29	33	48	83	92	81	61	52	51	51	38	36	27	23	20	20	23
24	27	24	21	27	55	85	93	87	75	61	47	36	49	42	40	35	35	35
25*	52	43	41	48	84	110	104	64	44	38	49	...	...	...	...	...	...	...
26	51	51	53	64	83	120	128	105	83	63	50	23	21	27	24	24	24	26
27*	39	36	35	37	64	114	132	110	49	25	...	...	60	54	57	60	55	54
28	59	52	52	63	106	133	113	76	59	57	63	30	33	32	29	35	45	52
29	46	41	41	72	147	186	165	77	57	40	37	13	10	16	30	34	39	54
30	59	64	65	103	140	143	123	75	45	37	33	25	28	31	36	34	34	56
31	49	49	57	66	90	127	134	83	53	56	73	79	51	44	28	4	41	71
Mean	43.2	40.7	41.2	53.6	79.3	93.1	95.5	70.5	51.4	44.9	42.3	31.5	28.5	26.7	25.9	26.0	31.4	38.7

1	51	47	51	53	66	116	105	98	94	81	51	34	51	39	42	52	75	108
2*	174	144	141	147	160	178	198	187	140	95	81	79	69	56	44	67	72	70
3	23	36	59	59	56	57	106	101	108	59	73	76	63	72	87	74	74	89
4	40	43	42	42	71	117	128	101	82	60	53	46	56	59	55	56	53	61
5	52	57	52	71	88	115	99	61	44	36	23	19	19	25	49	59	63	74
6	40	34	39	49	118	158	130	90	65	49	44	50	46	42	31	26	29	37
7*	24	39	45	55	78	131	162	114	103	87	68	61	56	40	46	36	±	±
8	46	53	55	59	76	108	102	88	80	50	18	25	34	30	27	32	36	66
9*	12	9	5	6	5	+	+	+	109	95	84	70	76	49	38	61	76	95
10	98	120	175	202	222	224	211	137	111	91	89	91	69	74	105	81	70	82
11	96	86	76	83	103	130	185	186	112	105	83	67	60	58	63	72	79	114
12	78	75	83	90	121	185	145	136	133	105	83	52	99	74	76	75	80	83
13*	105	114	123	146	176	192	192	172	102	62	40	31	51	...	...	...	...	...
14*	39	41	39	37	41	49	55	51	41	32	27	21	-6	-2	—	—	—	—
15	-6	-11	-5	00	6	17	25	32	42	46	45	42	12	7	9	16	30	25
16	66	60	64	73	91	123	148	146	105	79	83	68	64	56	54	81	82	79
17*	102	100	97	91	96	150	139	137	126	...	...	...	...	31	47	50	47	29
18	64	75	55	46	60	68	124	116	108	95	41	44	50	35	35	48	58	64
19	52	52	53	66	89	85	100	81	57	50	47	16	71	59	46	48	54	74
20	35	44	52	70	105	144	168	144	94	86	126	50	58	33	64	88	101	80
21	69	57	64	67	86	134	165	127	86	84	96	110	112	93	96	50	88	74
22*	137	120	111	210	182	157	152	120	101	84	45	24	77	87	34	66	108	...
23	51	60	65	75	109	135	133	106	87	76	80	54	43	6	8	51	34	92
24*	61	63	66	69	119	116	153	119	49	49	24	78	...	—	-22	12	153	36
25*	41	37	31	20	24	22	27	+	±	20	98	73	20	±	7	15	20	27
26	86	22	29	37	52	69	69	52	44	29	39	27	39	42	39	98	91	76
27	100	90	59	128	151	152	146	88	74	51	72	34	37	34	34	37	52	64
28	77	134	119	189	182	129	112	72	52	55	45	32	25	20	15	22	47	55
29*	-60	6	112	55	100	82	145	-46	00	12	12	30	31	44	68	44	56	64
30	100	108	94	100	100	124	135	128	88	51	59	57	35	65	61	41	47	42
31	102	102	71	115	131	161	144	120	104	73	48	35	34	25	88	-21	94	98
Mean	62.9	64.0	64.4	79.7	99.2	121.5	127.6	105.2	84.3	67.6	61.8	49.0	51.3	45.1	51.6	51.9	63.7	73.2

(IN VOLTS).

JULY, 1898.

7p	8p	9p	10p	11p	M.N.	Mean	Maximum		Minimum		Range	Remarks
								h m		h m		
...	...	...	...	...	...	...	192	4.48 a	21	11.24 a	171	≡a.
...	2	103	16	30	55	...	55	M.N.	00	7.00 p	55	● 3.05-3.15p. ╱ 10a.-Noon, 7p.
39	37	37	39	51	60	...	140	5.36 a	00	3.00 p	140	╱ 3-5p.
38	53	64	71	68	60	...	71	10.00 p	2	11.50 a	69	● 2.55-3.30a., 4.40-6.45a., 2.20-3.12p., 4.15-4.25p.
3	6	7	9	9	5	...	138	6.48 a	3	6.15 p	135	—— [╱ 8a.
42	42	46	52	52	42	...	63	2.36 p	00	8.00 a	63	● 5-5.15a., 6.25-7.10a., 8-8.10a., 0.50-1.45p., 10.50p.-
32	46	80	88	67	49	20.0	114	9.20 p	-21	9.18 a	135	● -1.20a.. 2.06a.-7.10p.. 11-11.10p.
-6	-11	-9	-9	-9	-9	...	146	6.30 a	-16	11.18 a	162	——
86	92	90	87	85	83	...	103	6.43 p	-8	0.30 a	111	ꓘ 7-7.50p., 8.05-8.34p.
±	25	25	24	23	22	...	157	6.39 a	28	6-8 p	134	T 5.10-7p.
79	84	90	102	97	79	...	106	9.18 p	<-**35**	10a.-N.	>141	——
...	...	...	...	...	...	...	108	9.33 a	62	1.54 a	46	ꓘ 6.36p.-< 7.10-9.40p.
...	...	...	...	...	...	...	...	...	...	...	...	● 1.15--6.50a. ꓘ 2.30-3.12a.
...	...	...	...	...	...	...	...	...	...	...	...	——
41	52	62	68	62	60	...	76	10.00 p	19	6.30 p	57	● 10.15a.
41	50	60	67	65	67	49.5	73	1.00 a	22	2.12 p	51	——
18	21	22	23	20	20	50.9	146	7.48 a	9	5.48 p	137	——
53	55	44	45	44	40	28.2	56	7.42 p	7	10.48 a	49	——
58	60	47	38	34	32	45.1	90	7.13 a	7	2.20 a	83	T 3p.-ꓘ 3.42-4.07p. T 5.50-7.30p. ● 3.40-4.35p.,
...	...	...	...	...	...	...	106	6.30 a	21	2.24 a	85	—— [5.33-6.10p., 6.50p., 8p.
...	...	...	...	...	...	...	...	...	...	...	...	——
25	37	31	25	24	25	...	39	7.54 p	00	3.30 p	39	——
36	47	47	45	39	31	43.3	96	5.33 p	19	4.36 p	77	——
39	45	53	59	60	57	49.5	93	7.00 a	35	5.00 p	58	——
39	35	38	41	45	45	...	111	6.18 a	31	9.24 a	80	≡a.
48	61	53	53	50	42	55.3	128	7.00 a	21	1.00 p	107	——
59	78	79	67	58	57	...	132	7.00 a	7	4.30 a	125	——
65	71	60	52	44	45	59.4	139	6.24 a	20	11.42 a	119	< 8p., 9p. ╱ 1p.
69	54	43	42	40	43	58.2	**227**	6.20 a	4	11.39 a	223	< 8p.
71	71	62	55	52	50	62.3	150	5.18 a	21	11.30 a	129	T 5.05p. < 8p., 9p.
94	75	57	54	49	43	63.6	137	6.54 a	4	4.20 p	133	< 8p., 9p.
52.0	54.7	52.3	51.7	47.0	43.2	48.8	120.7		12.3		108.4	

(IN VOLTS).

AUGUST, 1898.

7p	8p	9p	10p	11p	M.N.	Mean	Maximum		Minimum		Range	Remarks
								h m		h m		
100	81	85	93	121	102	78.6	192	M.N.	11	3.30 a	181	● 5.15-6.20a., 2.03-7.40p., 8.40-9.10p. T 2.56p.-ꓘ 3.45p.- T 5.30p. < 6.30-7p.
±	±	±	±	55	+	...	227	0.05 a	—	7-10 p	...	T 7.25p.-ꓘ 7.28-8.58p. < 11p. ꓘ 11.33p. ● 7.28-9.20p., 10.35p.-
95	103	80	59	42	37	70.3	135	7.15 a	8	6.10 a	127	● -0.35a., < 1a. ● 2.55-6.30a., 8.40-9.20a., 1.10-5.30p., 7-7.30p.,
85	100	95	71	59	63	68.6	137	6.35 a	23	0.05 a	114	● 0.15-1.30a. < 3-4a. ● 5.35-5.55p. [8.50-10.20p.
78	64	64	59	60	63	58.1	120	6.15 a	11	11.40 a	109	< 8-9p.
50	53	53	65	56	38	58.0	174	5.35 a	11	11.50 p	163	< 7p.-ꓘ 9.10-10.30p.
±	61	41	45	34	38	...	176	7.05 a	—	5-8 p	...	T 4p.-ꓘ 4.02p.-< 6.30-6.50p.
85	94	93	72	61	41	59.6	124	6.00 a	11	10.40 a	113	● 3.15-3.40a., 7.30-7.40a.
137	167	135	103	127	105	...	171	7.40 p	4	4.20 p	167	T 0.05a. ● 2.40-8.30a.
95	115	119	120	113	102	121.5	238	5.45 a	26	4.35 p	212	≡ 4-7a.
146	142	124	106	122	111	104.5	219	7.05 a	51	N.-1 p	168	——
95	111	124	120	106	97	101.1	200	5.30 a	39	8.15 a	161	● 6.50-8.26a.
69	54	51	46	47	43	...	208	7.25 a	...	...	...	≡ 4.45-6.40a.
—	-8	-8	-5	-2	-11	...	57	7.20 a	—	2-7 p	...	● 2.05-2.45a., 3.55-7.25a., 9.15a.-1.25p., 2.15-
45	54	53	56	59	67	27.7	72	11.50 p	-27	1.35 a	99	● -5.30a.
66	61	61	79	73	96	81.6	212	7.15 a	43	6.50 p	169	≡ 4.28-7.20a. < 9-10p.
24	63	53	68	76	66	...	162	5.55 a	9	7.05 p	153	≡ 4.35-6a.
70	60	51	46	44	48	62.7	135	7.25 a	25	2.35 p	110	≡ 4.40-6.30a. < 9-10p.
85	67	70	51	48	40	60.9	103	7.20 a	-46	0.20 p	149	——
97	95	57	71	72	71	83.5	197	7.05 a	13	1.30 p	184	——
112	136	124	134	117	129	100.4	174	6.40 a	36	4.03 p	136	< 6.50-10.30p.
...	...	6	7	20	29	...	**258**	5.10 p	—	5-9 p	...	≡ 3.20-4.30a. T 3.30p.-ꓘ 5.10-8p. ● 7.25-8.55p.
114	111	94	52	82	68	74.4	148	6.15 a	-29	2.23 p	177	< 2a. T 1.30-1.50p. < 7-8p.
73	73	68	53	49	34	...	+	N.-7 p	—	N.-7 p	...	< 3a. ● 8.57-9.25a., 10.10a.-6.40p.
54	71	...	...	—	5	...	201	7-9 a	-**152**	7-9 a	353	● 1.50a-0.10p., 1.25-2.45p., 6.40-7.20p., 9.45p.-, [T 1.17p., 6p., 7.20p.
88	103	118	148	98	101	66.5	172	9.32 p	-37	4 5 p	209	● -0.20a. < 4a. ● 10.10-10.35a., 4.07-4.17p., 6.10p.
101	99	101	99	96	103	83.4	169	5.20 a	4	3.10 a	165	● 3-3.10a. ≡ 4.25-7a. [T 4.08-4.12p.
80	95	102	100	107	132	83.2	204	3.55 a	5	3.28 p	199	≡ 3.30-7.30a.
81	82	68	75	62	94	...	196	2.48 a	-58	0.27 a	254	● 0.45-10.05a. T 11.55a.-0.05p.
57	88	66	84	61	104	79.1	148	8.05 a	33	0.50 a	115	< 8p.
96	99	88	92	76	63	84.9	187	5.45 a	-47	3-4 p	234	● 3.02-3.15p., 9.50-11.30p. T 3.55-4.30p., 4.40-4.50p.
87.6	92.0	86.8	84.6	79.7	84.1	76.6	164.7		7.8		156.9	

ATMOSPHERIC ELECTRICITY

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p	5p	6p
1*	74	83	62	83	109	113	100	78	83	71	8	70	55	00	—	—	11	13
2	65	51	48	67	85	113	124	120	52	41	40	44	33	33	30	40	52	58
3*	54	60	71	80	81	78	75	55	78	...	55	–	±	±	00	13	11	7
4	107	102	111	99	104	144	159	120	113	52	38	43	32	38	29	23	28	40
5	62	58	57	85	100	104	104	74	45	30	48	33	21	28	21	26	48	59
6*	73	21	24	38	44	+	+	+	+	+	+	+	+	±	±	9	6	7
7*	±	-5	–5	-5	–36	00	10	24	20	+	24	53	43	41	29	36	28	35
8	42	47	45	55	70	105	125	62	54	69	29	49	27	27	30	6	14	32
9	87	85	65	55	80	102	117	117	105	50	40	37	36	44	30	25	33	57
10*	14	14	20	38	30	37	46	91	50	51	74	43	...	...	42	44	56	62
11	25	66	90	94	64	28	39	106	59	53	70	70	34	35	41	59	57	67
12*	133	100	89	50	137	117	112	96	87	142	...	...	...	...	...	7	29	19
13*	-6	–23	–55	4	14	10	14	21	24	6	39	39	49	37	45	56	63	17
14*	25	21	–42	–52	–42	-29	25	15	11	11	12	12	9	15	21	31	44	41
15*	15	4	4	22	8	9	9	4	3	...	–6	11	9	21	...	...	...	...
16*	81	68	73	62	79	71	79	53	36	39	34	43	29	32	34	47	41	62
17*	–24	00	5	00	4	4	15	13	10	13	10	13	20	26	4	5	5	8
18*	7	8	12	10	22	22	20	7	11	10	20	12	25	30	32	32	34	73
19	49	45	37	49	72	112	108	67	58	40	49	43	45	34	34	49	58	68
20	73	77	83	100	110	129	143	89	63	54	30	31	10	16	35	22	61	48
21	115	108	97	94	86	53	90	79	44	21	8	5	9	-5	10	-2	2	43
22	70	42	61	79	63	96	86	69	14	–23	00	3	4	14	30	33	67	92
23	94	66	65	65	52	61	69	72	41	67	–9	61	82	42	21	42	44	57
24*	149	140	124	112	141	126	157	198	208	90	84	44	35	37	11	17	86	4
25*	4	4	4	7	8	1	-10	-6	00	00	3	8	00	00	3	4	–4	9
26	5	7	9	11	46	87	82	84	64	57	64	52	44	37	46	55	62	68
27	110	109	103	110	160	197	170	126	87	66	64	64	58	60	66	77	80	131
28	191	160	147	154	140	175	174	127	97	72	72	40	40	35	37	49	52	87
29*	91	44	37	30	–22	00	10	28	49	–7	–74	–79	...	129	...	...	...	...
30*	...	...	...	...	...	...	...	...	...	...	9	10	8	15	41	83	110	129
Mean	78.2	73.1	72.7	79.8	88.0	107.6	113.6	93.7	64.2	46.4	38.8	41.1	33.9	31.3	32.9	36.0	47.0	64.9

ATMOSPHERIC ELECTRICITY

1	90	99	105	186	188	170	121	85	64	60	62	35	36	39	35	54	60	80
2	47	11	19	28	39	56	37	39	32	52	00	–5	–6	10	41	55	71	70
3	57	66	56	79	126	169	184	145	107	93	88	141	69	22	37	59	74	139
4	136	146	152	147	164	216	221	190	173	111	104	64	45	51	53	87	101	97
5*	180	143	126	124	132	131	116	108	57	46	45	...	20	12	16	22	11	16
6	-7	-8	–10	5	11	33	62	78	89	64	66	48	52	29	45	41	46	63
7	103	94	104	100	105	147	150	138	90	69	69	41	30	50	36	40	46	63
8	81	58	64	72	87	95	104	87	65	57	62	55	45	32	13	42	49	52
9	82	77	65	72	88	92	77	89	104	51	36	29	21	52	35	63	74	86
10	80	98	110	135	150	194	152	150	107	73	48	33	31	29	37	44	58	80
11	114	111	102	90	110	154	193	118	90	54	46	46	51	32	36	57	55	74
12	168	149	130	145	156	142	171	141	134	79	63	30	21	14	17	31	39	55
13	132	124	126	134	151	153	164	147	94	83	73	81	38	113	109	103	119	91
14*	100	92	90	111	132	115	111	85	63	58	44	42	...	...	...	...	...	...
15*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
16*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17*	...	...	...	...	...	...	...	...	...	...	...	...	+	+	+	+	+	+
18*	+	+	+	+	+	+	+	+	+	+	+	+	...	...	133	113	99	102
19	111	127	128	122	124	118	165	129	69	34	12	17	2	00	1	17	35	41
20*	101	102	100	101	134	166	163	133	128	130	126	109	85	–5	-34	–15	–38	90
21	32	32	28	44	54	72	93	100	99	98	128	144	120	104	101	101	55	72
22	124	138	110	150	133	152	194	174	109	82	66	72	80	72	46	56	84	81
23*	102	69	63	88	167	+	+	+	+	156	108	171	107	102	75	59	74	113
24	165	165	132	162	153	163	161	163	142	100	95	58	93	53	41	73	62	66
25*	123	167	136	134	143	175	146	—	—	—	82	98	±	6	–33	-80	-13	–85
26	–3	6	10	9	19	23	30	22	22	18	20	21	16	16	12	11	12	16
27	120	121	139	77	63	88	101	76	43	32	31	40	48	24	30	26	43	50
28	–10	57	25	37	77	59	151	61	98	79	37	39	87	81	67	72	57	78
29	89	110	96	125	177	181	256	233	172	159	101	91	69	50	49	64	75	133
30	160	135	165	166	140	193	182	153	87	81	77	53	73	57	78	109	115	132
31	196	205	203	189	221	260	286	290	148	111	81	36	72	52	40	52	75	96
Mean	94.0	96.4	93.6	103.4	115.3	133.2	148.0	127.6	97.2	74.5	62.0	53.1	49.7	44.6	43.6	57.1	63.9	78.0

(IN VOLTS). *SEPTEMBER, 1898.*

7p	8p	9p	10p	11p	M.N.	Mean	Maximum	h m	Minimum	h m	Range	Remarks
14	19	34	49	60	64	...	153	5.35 a	—	2-5 p	...	[/ 3-7p. ● 9.59-11.20a., 1.23-4.40p. T 2.57p.-K 3.03-3.10p.
65	53	48	51	54	52	59.1	140	7.16 a	20	1.35 p	120	—— [T 10.40-11.35a. ≡ 11.50p.-
33	74	70	78	82	109	...	162	7.35 a	—	N.-3 p	...	● 5.30-5.40a., 5.50-6.55a., 7.50a.-5.05p. / 1p.
32	63	99	61	45	45	72.0	221	7.00 a	18	3.55 p	203	≡ -1.20a., 6.30-6.50a. < 8.10p.-K 9.05-9.17p. ● 9.20-9.35p.
50	45	44	50	48	51	53.8	143	6.33 a	2	1.05 p	141	< 2a., 8p. ≡ 5.10-6.60a. T 11.35p. ● 9.35-9.50a., [1.03-1.10p., 11.55p.-
16	24	±	±	±	±	...	219	8.35 p	—	8p-M.N.	...	● -3.10a., 4.58-6.58a., 8.28-8.45a., 9.21a.-0.25p., 1.27-
55	58	52	55	41	47	...	193	0.35 a	-47	5.20 a	210	/ -6a. ● 0.15-6.10a. < 10p. [3.15p., 6.15-6.40p.,
49	53	66	67	98	88	54.5	131	6.45 a	- 4	4.08 p	135	—— [8.35-11.40p. / 8p.-
71	85	75	94	60	30	65.8	135	8.40 a	16	11.45 p	119	——
53	24	9	36	8	63	...	105	8.10 a	3	11p-M.N.	102	——
94	92	85	98	107	132	694	172	11.20 p	3	0.10 a	169	≡ 0.30-10.35a. [T 0.30-1.20p.
33	20	6	2	9	00	...	218	0.55 p	—	11a-2p	...	≡ 5.10-9.30a. ● 11.40-11.55a., 5.30-6.30p., 7.55p.-,
35	43	45	47	38	20	...	70	3.30 p	- 75	2.55 a	75	● -6.20a., 9.45-9.55a., 11.50a.-1.20p., 5.35-6.25p.
46	23	36	42	15	42	...	76	7.15 p	-108	4.35 a	184	● - [10.15p.-
...	13	21	37	53	68	...	104	6.35 a	- 80	11.35 a	184	● -5.10a., 7-11.05a., 2.10-2.50a. ≡ 9 20p.-
56	41	6	9	...	51	...	104	1.30 a	-83	10.50 p	187	≡ -1.35a. ● 8.30p.-, ≡ 5.40-6.20a.
9	9	5	7	5	7	...	33	1.48 p	-52	0.25 a	85	● -6.20a.
91	90	107	54	52	51	...	138	8.50 p	00	7.40 a	138	≡ 3.10-8.15a.
82	91	96	99	101	92	65.7	122	6.32 a	21	1.40 p	101	● 1.55-4.15p.
77	96	79	102	103	140	73.9	167	6.55 a	6	1.05 a	161	——
61	55	62	64	68	58	51.2	146	0.25 a	- 25	2.25 p	171	● 6-7a., 8-8.20p.
95	81	99	120	186	101	61.7	210	11.00 p	- 50	9.20 a	260	● 10.10-10.30p.
100	117	128	132	157	140	73.6	197	11.20 p	- 26	10.42 a	223	● 4.50a.-3.20p.
2	4	6	11	6	5	...	218	8.45 a	- 3	7. 5 p	221	● 10.12-10.15a., 1-1.45p., 4.30p.-
00	4	00	7	9	2	...	62	6.35 a	-131	8.25 a	193	● -
110	125	131	135	133	127	68.4	148	9.40 p	00	0.01 a	148	● -0.50a., 3.45-5.30a., 8.35-9.10a.
175	194	108	129	135	164	114.3	235	6.55 p	42	1.45 p	193	≡ 9.35-11.20p.
97	92	102	79	90	85	99.7	199	0.45 a	24	1.55 p	175	——
...	...	...	...	...	...	...	...	...	...	...	...	● 1.50a.-9.30p.
117	93	93	104	88	80	...	...	...	...	...	...	——
82.7	8.87	87.3	91.5	98.9	93.2	70.2	169.0		3.4		165.6	

(IN VOLTS). *OCTOBER, 1898.*

7p	8p	9p	10p	11p	M.N.	Mean	Maximum	h m	Minimum	h m	Range	Remarks
100	91	53	12	12	22	77.5	216	6.30 a	- 4	11.06 a	220	● 6.45-9.10a., 4.45p., 6.10-6.21p.
92	77	62	60	56	50	41.4	123	0.50 a	-56	11.21 a	179	● 0.40a., 6-7.05a. / 1p.
203	177	163	159	72	144	109.5	223	7.10 p	- 2	1.30 p	225	——
200	167	189	161	134	153	135.9	271	6.48 a	5	1.15 p	266	● 8.05p.
4	- 3	- 4	3	5	- 8	...	213	1.25 a	-22	8.22 p	235	● 4.55-6.15a., 8.05-9.15a., 4.05p.-
92	103	131	143	117	119	58.8	164	9.54 p	-30	2.12 a	194	● -7.05a., 8.40-9.20a.
78	93	95	90	82	94	83.6	171	7.09 a	19	1.00 p	152	——
37	59	55	69	72	69	61.7	109	7.05 a	-16	3.15 p	125	T 1.35-1.50p., 2.50-2.55p. ● 2.58-3.25p., 4.50-5p.,
84	44	54	74	71	67	66.1	136	8.42 a	10	0.35 p	126	● 1.40-4.15a., 5.35a.-2.15p. [7-10.15p.
102	108	108	132	144	109	96.3	237	5.36 a	20	1.48 p	217	≡ 5.25-6.20a.
66	144	152	151	167	180	99.7	214	6.25 a	20	1.45 p	194	● 6.25-7.30a.
91	115	147	143	169	126	103.2	227	6.44 a	00	2.08 p	227	——
117	101	102	110	92	94	110.5	188	7.12 a	-43	0.06 p	231	● 1.15p.
...	...	...	...	...	...	...	...	...	...	...	...	——
...	...	...	...	...	...	...	...	...	...	...	...	● 10.05-10.30p. < 10.30p.-
...	...	...	...	...	...	...	...	...	...	...	...	< -0.20a., 3p., 9-10p. ● 0.50-2.20a., 5.50-6.40a.
+	+	+	+	+	+	...	...	...	...	...	...	——
104	145	177	163	175	145	...	...	...	...	...	...	● 3.35-4.55a.
65	45	117	134	116	119	77.0	187	7.00 a	-23	1.40 p	220	——
-129	-120	109	- 61	- 24	13	...	194	7.27 a	<-157	6-7 p	>351	● 9a.-
90	101	119	133	160	123	91.8	174	11.27 p	15	0.24 a	159	● -0.25a.
61	73	58	85	112	81	99.7	212	7.06 a	34	2.48 p	178	● 10.10p.
106	150	157	175	167	187	...	>321	5.10- -9.10 a	39	3.13 a	>282	≡ 4.15-7.05a.
84	79	107	135	132	125	112.9	>199	1.05 a	45	1.40 p	>154	——
—	—	—	—	- 74	- 23	...	219	6.05 a	<-150	6.15- -10.00 p	>369	≡ 6-6.40a., 7.25-8.35a., 11.55.-
18	24	61	92	136	116	30.3	156	11.32 p	-23	0.16 a	179	● -6.30a.
64	81	87	95	96	110	70.2	156	2.48 a	9	5.36 p	147	——
91	74	73	77	105	107	70.0	210	7.03 a	98	1.00 a	112	● 0-8.35a.
161	186	146	161	182	183	135.4	288	7.10 a	37	2.48 p	251	● 5.12p.
168	202	225	244	192	185	140.5	267	9.45 a	52	11.55 a	215	——
138	206	193	164	169	141	151.0	>295	5.27- -7.38 a	24	11.56 a	>271	——
100.1	106.8	113.5	119.3	117.6	114.4	92.0	>201.1		8.2		>192.8	

ATMOSPHERIC ELECTRICITY

Day	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	Noon	1p	2p	3p	4p	5p	6p
1*	118	49	38	-30	20	80	105	78	38	52	-59	-28	...	-36	36	20	59	104
2	111	103	120	137	124	179	186	208	228	202	161	120	114	94	92	107	185	182
3*	163	132	157	107	35	±	5	25	-55	-52	-52	—	—	—	—	—	—	—
4*	26	20	23	23	40	62	92	74	41	28	26	29	+	+	±	±	±	±
5*	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
6*	+	±	—	—	—	—	—	—	—	—	—	—	+	+	+	+	+	+
7*	+	+	+	+	+	+	+	+	+	+	+	+	44	15	9	44	25	40
8*	±	±	±	±	26	26	71	73	66	84	58	62	71	52	113	140	156	106
9	83	170	259	273	256	302	290	232	213	119	98	96	68	59	51	43	87	166
10*	89	78	83	76	89	104	111	141	78	54	63	59	72	78	54	83	152	196
11	154	202	180	171	89	207	210	258	133	85	53	40	18	11	22	62	49	78
12*	+	+	+	+	+	+	220	257	245	202	132	100	77	41	52	48	54	107
13	118	97	90	106	116	139	120	123	118	93	109	95	67	88	76	102	146	116
14	38	45	19	42	106	144	146	101	158	137	97	92	113	90	158	109	137	111
15	130	152	161	161	154	180	173	224	168	96	89	87	19	72	72	106	103	156
16	76	81	88	120	142	162	191	174	137	93	74	64	56	59	59	81	145	184
17	125	142	137	145	177	170	175	155	152	135	85	72	50	61	61	75	67	114
18*	78	72	47	22	19	-11	-31	00	17	50	28	36	44	80	117	±	—	—
19	28	32	46	92	219	335	302	194	146	94	62	86	67	53	67	94	121	107
20	72	61	89	82	97	175	150	115	126	116	97	90	81	82	94	84	93	96
21*	68	51	54	53	108	141	211	202	182	149	141	138	...	...	...	...	...	...
22*	95	38	24	33	69	100	70	64	135	79	81	64	...	81	69	53	39	43
23*	—	±	±	—	—	—	—	—	—	—	—	—	...	...	+	+	±	—
24*	8	8	8	11	11	15	37	49	26	22	20	18	10	12	10	15	52	107
25	225	210	183	158	182	205	246	255	221	199	165	94	94	67	55	67	79	123
26*	158	143	130	135	173	186	214	276	232	198	134	150	14	5	117	121	96	±
27	8	11	23	30	114	148	192	178	192	119	88	77	62	52	32	51	48	51
28	160	179	152	152	244	247	189	216	155	112	88	89	56	61	82	133	185	197
29	168	147	87	78	104	128	168	163	190	165	144	114	104	93	111	121	126	188
30*	75	81	39	42	19	±	±	109	114	106	137	106	105	110	101	103	91	82
Mean	106.9	116.6	116.7	124.8	151.7	194.4	195.6	185.8	166.9	126.1	100.9	86.9	69.2	67.3	73.7	88.2	112.2	133.5

ATMOSPHERIC ELECTRICITY

1*	—	±	±	±	+	+	48	173	198	161	165	151	139	126	151	124	109	83
2*	119	101	97	83	72	61	60	61	54	29	38	+	+	±	—	—	—	—
3*	+	+	+	+	—	—	—	—	±	—	±	±	4	3	3	1	4	10
4	10	9	10	13	25	41	79	117	82	19	43	34	39	34	35	41	36	38
5	41	41	47	59	86	118	115	114	76	46	42	45	49	44	42	58	69	104
6	116	120	99	114	40	129	138	125	-10	-42	-27	-1	11	15	39	126	139	105
7	239	234	192	189	159	225	269	217	205	182	104	90	55	49	63	94	69	100
8	68	109	53	32	35	58	82	85	81	45	29	23	38	29	48	63	73	81
9*	85	82	67	78	27	35	111	136	104	72	38	65	70	64	72	95	49	-52
10	-40	-18	8	18	25	32	42	101	85	85	70	71	70	70	85	74	102	130
11	71	58	59	78	109	161	153	151	146	115	90	82	53	27	53	57	111	161
12*	83	68	88	71	63	115	135	160	152	155	75	62	-84	19	42	24	-21	6
13*	12	9	27	26	23	22	-64	-15	-65	-64	-56	±	- 1	00	7	2	10	15
14	43	42	38	38	78	100	146	122	93	81	47	49	35	35	45	53	60	62
15*	137	125	149	88	122	202	189	160	116	75	72	62	84	75	14	—	—	13
16	107	74	89	85	154	215	160	146	158	104	72	56	57	53	74	91	130	168
17	226	159	143	135	138	173	191	226	274	264	251	261	136	142	123	131	148	173
18	203	221	223	162	188	191	136	252	230	230	257	125	81	103	103	72	65	67
19	41	37	33	33	34	36	43	47	45	40	41	33	54	61	59	73	75	138
20	220	159	186	163	207	203	275	321	264	224	91	60	65	61	73	98	62	65
21*	62	58	43	17	17	17	22	24	13	8	5	00	...	...	...	...	...	...
22*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
23*	...	...	...	...	...	...	...	...	...	...	...	...	-21	-34	-23	89	128	211
24*	230	209	135	94	122	122	154	183	207	226	+	+	149	103	132	173	187	234
25	217	75	65	87	103	145	183	219	132	100	84	84	71	74	124	91	79	122
26	132	121	82	77	53	56	51	52	49	36	47	36	75	85	65	64	92	103
27*	166	198	±	+	147	161	193	121	81	- 9	36	+	±	±	±	±	±	±
28	22	36	59	67	75	100	125	79	229	163	103	75	19	7	95	84	146	163
29	122	137	114	110	128	154	209	122	147	402	13	7	7	23	82	84	73	85
30	49	59	49	48	68	72	93	153	49	20	15	-16	19	46	69	63	60	74
31	59	61	57	80	114	163	224	223	159	124	98	88	75	80	69	93	121	133
Mean	102.4	91.3	84.7	83.6	95.7	124.8	118.1	151.3	132.8	119.5	78.2	63.4	53.1	54.6	70.8	79.6	90.0	109.1

148.1

(IN VOLTS). *NOVEMBER, 1898.*

7p	8p	9p	10p	11p	M. N.	Mean	Maximum		Minimum		Range	Remarks
								h m		h m		
129	147	161	143	129	103	...	189	9.21 p	-78	1.36 p	267	⁄4-5p.
188	224	243	224	179	175	162.0	273	9.27 p	72	2.15 a	201	——
—	—	-68	-34	-7	8	...	178	0.18 a	<-185	4.18-8.06 p	>363	●3.45a.-, ⁄9-11p.
+	+	+	+	±	+	...	...	...	...	...	...	≡6.30-7.40a. ●-0.30a., 10.20a., 2.10-4.10p. ⊤2.20-3p
+	+	+	+	+	+	...	...	...	...	...	...	——
+	+	+	+	+	+	...	...	...	...	...	...	●2.50-7.10a.
71	61	57	96	66	30	...	...	...	...	...	...	——
129	138	150	150	229	182	...	147	1.24 a	48	2 42 a	99	●0.35-10.30a.
115	175	249	128	92	79	154.3	**397**	5.05 a	27	3.42 p	370	——
235	+	+	+	+	219	...	+	8-11.55 p	31	9.48 a	...	●8.05-11.15a.
88	71	85	85	89	89	105.4	302	7.55 a	-51	1.18 p	353	——
111	123	150	145	125	113	...	313	7.40 a	22	1.33 p	291	——
37	74	90	56	25	00	91.7	177	5.08 p	-26	10.24 p	203	●7.30-8.50a., 1.45-7.15p., 9.40-10.50p., 11.50p.-
146	127	120	127	118	130	108.8	201	6.30 p	6	3.12 a	195	●-1.20a., 8.10p.
127	101	79	89	84	82	119.4	219	7.21 a	14	1.10 p	105	——
172	221	182	187	164	187	129.1	352	5.48 p	34	0.40 p	318	——
83	50	14	14	28	28	96.5	231	5 27 a	12	10.42 p	219	●7.50p.-
—	11	20	13	22	26	...	205	1.30 a	<-**193**	6.25-7.10 p	>398	●-10.20p.
149	235	121	131	134	108	125.6	>357	6-7 a	20	0.03 a	>337	——
78	46	107	36	63	81	92.1	225	8.45 p	29	9.36 p	296	●7.15a., 8.40-8.50a., 0.05p.-
70	47	58	35	41	122	...	...	...	...	...	...	●-2.40a., 3.50-4.10p., 6.50-8.20p.
37	-41	28	±	±	±	...	...	...	...	...	...	●0.40-2.15a., 5.05p.-, ✱0.05p., 11.40p.
±	95	11	13	11	8	...	...	...	...	...	...	●-● ✱4.40a.-✱5.50a.-● ✱6.30a.-●7.10a.-11.40p.
133	162	166	182	208	228	...	300	11.27 p	2	3.20 a	298	——
173	188	232	224	195	177	167.4	300	8.20 a	47	2.30 a	253	——
±	—	—	—	—	—	...	295	8.27 a	<-190	5.20-11.30 p	>485	●0.30-1.40p., 3.20p.-
56	93	147	169	140	133	92.2	256	9.30 p	-16	0.18 a	272	●-0.30a.
177	114	103	181	139	146	148.2	41	5.08 a	17	1.30 p	24	——
257	212	137	115	106	85	138.2	275	6.09 p	72	3.21 a	203	●9.25p.-
99	116	±	39	-27	—	...	212	5.10 a	<-115	9p-M.N.	>327	●-8.20a., 1.30-2.20p., 4-4.20p., 7p.-
131.2	137.9	136.4	126.1	111.1	107.1	123.6	>257.6		18.4		>239.2	

(IN VOLTS). *DECEMBER, 1898.*

7p	8p	9p	10p	11p	M. N.	Mean	Maximum		Minimum		Range	Remarks
								h m		h m		
106	110	105	90	104	121	...	...	...	...	...	...	●-5.15a.
—	—	—	—	—	±	...	+	...	—	...	...	●5.40a., 8.50a.-
13	10	7	10	13	10	...	+	...	—	...	...	●-5.40p., 6.40-7.30p., 9.50-10.10p.
35	36	47	41	38	36	39.1	120	7.50 a	6	2.42 a	114	——
100	111	108	142	142	105	79.3	156	10.54 p	28	2.30 p	128	——
110	137	177	218	209	204	95.5	270	11.04 p	-90	9.15 a	360	●4.50-6.50a.. 7.50a.-0.45p.
98	101	134	67	102	69	137.7	303	1.35 a	39	2.06 p	264	——
95	103	107	98	77	85	66.8	146	1.27 a	4	11.12 a	142	⁄11a.
-151	-32	-22	-97	-13	-92	...	158	8.24 a	<-159	6.30-7.20 p	>317	●4.55-5.20a., 9.50-10.15a., 4.05p.-
130	123	104	65	77	75	66.0	127	7.48 p	-127	0.21 a	>254	●-4.40a.
109	66	60	65	96	94	92.7	213	5.36 p	19	1.42 p	194	≡6-7a.
-11	24	-2	19	11	13	...	178	9.57 a	-106	1.00 p	284	●0.40-2p., 3.55p.-
21	37	39	44	41	38	...	139	11.40 a	-98	10.45 a	237	●-3.30p.
56	54	46	47	55	49	61.4	177	6.21 a	28	1.24 p	149	——
26	-31	84	159	131	110	...	209	6.30 a	<-177	4-5.42 p	>386	⊤4.15p.-⊼4.33p.-⊤4.40-4.50p.⊼6.20p.-<9.30p. 11p.-, ●5.18p.
151	86	83	119	160	214	116.9	264	5.33 a	11	1.14 p	253	<-5.30a.
246	277	232	215	228	216	196.6	>312	8.15 a	93	4.40 p	>216	——
60	53	50	48	51	44	140.6	>**575**	7-11a	20	9.06 p	>555	——
139	152	184	204	150	178	80.5	262	10.24 p	29	4.05 a	233	——
58	63	77	57	76	73	133.4	>332	7.20-8.30 a	-72	4.36 p	>404	——
...	...	...	...	...	...	...	...	...	...	...	...	——
...	...	...	...	...	...	...	...	...	...	...	...	✱9.10-9.40a., 3.10-3.20p., 4.45-6.30p.
203	219	+	+	+	+	...	...	...	...	...	...	——
208	220	243	243	212	241	...	+	...	92	1.54 p	...	——
117	140	180	193	155	162	125.5	>260	0-0.20a	50	3.35 p	>210	——
131	152	178	213	181	168	95.8	222	9.50 p	31	9.42 a	191	——
1	7	18	7	7	10	...	215	7.28 a	—	11 a-6.36 p	...	●2a.-9.30p.
212	195	117	209	179	155	113.3	>496	9 10 p	7	2.00 p	>489	——
76	50	52	35	35	35	96.0	33	7.00 a	1	1.36 p	35	●1.35-3.10a.
75	39	59	48	52	52	54.8	216	7.40 a	-**208**	11.38 a	424	⁄4a., 11a.-1p.
137	105	133	158	209	381	131.0	284	7.24 a	46	1.00 a	238	——
112.4	108.0	112.0	118.0	119.6	126.1	101.2	>23?.9		-0.7		>231.6	

MEAN ELECTRICAL POTENTIAL OF THE ATMOSPHERE IN VOLTS.

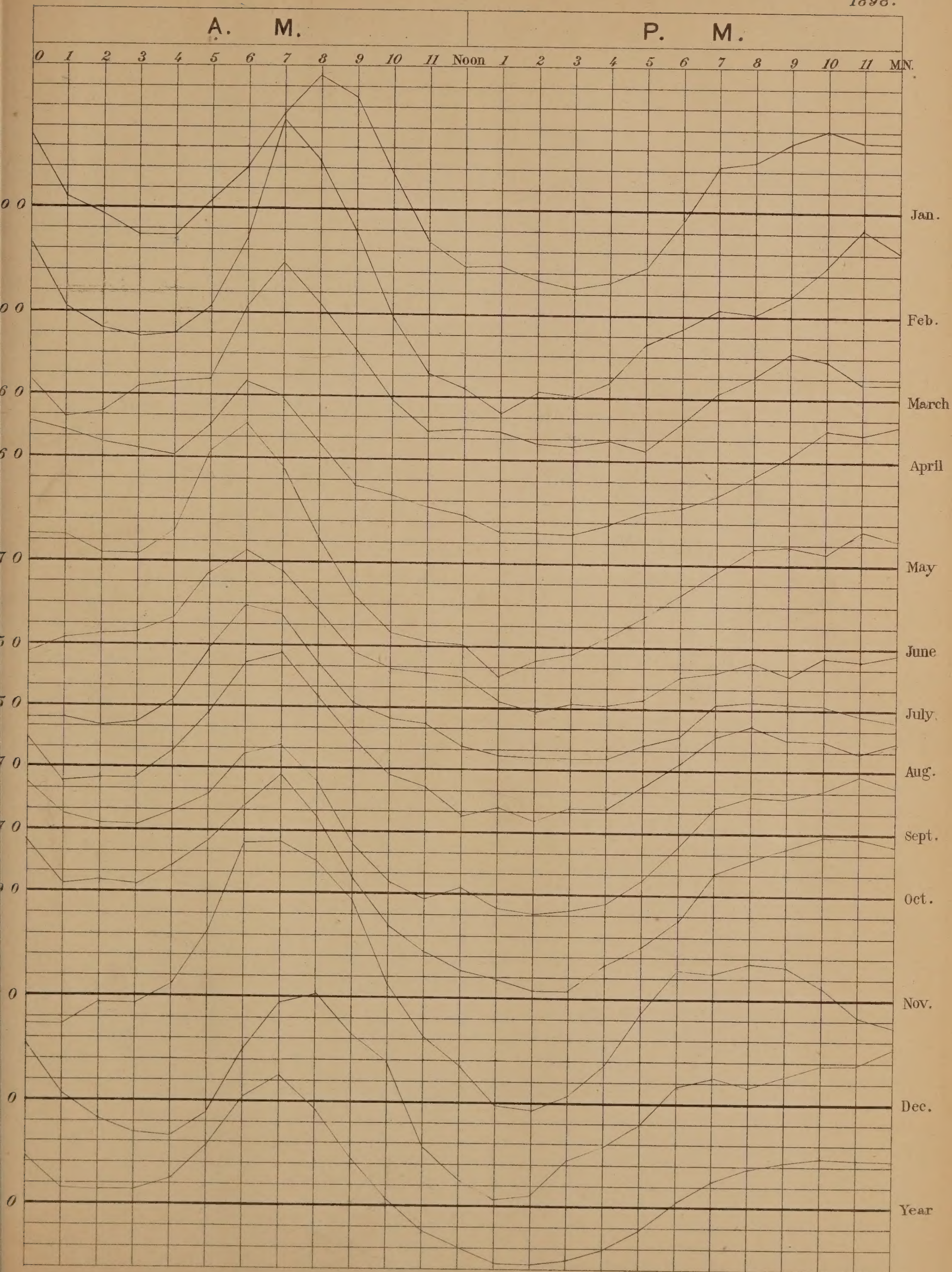
HEIGHT ABOVE THE GROUND=1.7 METRE.

1898.

Month / Hour	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
1a	104.6	101.7	49.3	72.2	83.1	52.8	43.2	62.9	78.2	94.0	106.9	102.4	79.3
2a	98.1	91.7	51.9	66.8	74.2	55.8	40.7	64.0	73.1	96.4	116.6	91.3	76.7
3a	87.3	89.4	64.1	63.8	74.0	56.2	41.2	64.4	72.7	93.6	116.7	84.7	77.3
4a	87.1	90.1	66.3	60.8	83.4	60.9	53.6	79.7	79.8	103.4	124.8	83.6	81.1
5a	103.1	102.9	67.7	75.5	121.6	84.6	79.3	99.2	88.0	115.3	151.7	95.7	98.7
6a	120.0	135.7	101.9	96.5	136.7	96.1	98.1	121.5	107.6	133.2	194.4	124.8	122.2
7a	148.6	195.9	125.0	89.7	115.9	85.3	95.5	127.6	113.6	148.0	195.6	148.1	132.4
8a	165.4	174.4	104.3	67.3	81.0	66.2	70 5	105.2	93.7	127.6	185.8	151.3	116.1
9a	155.9	139.9	80.8	48.2	53.9	46.7	51.4	84.3	64.2	97.2	166.9	132.8	93.5
10a	117.1	98.4	59.3	42.5	37.2	37.6	44.9	67.6	46.4	74.5	126.1	119.5	72.6
11a	85.1	71.6	43.7	37.0	31.8	35.7	42.3	61.8	38.8	62.0	100.9	78.2	57.4
Noon	71.9	65.1	45.5	32.4	31.0	34.0	31.5	49.0	41.1	53.1	86.9	63.4	50.4
1p	72.7	51.8	43.1	25.2	16.3	23.5	28.5	51.3	33.9	49.7	69.2	53.1	43.2
2p	66.6	60.7	38.2	25.2	33.7	19.7	26.7	45.1	31.3	44.6	67.3	54.6	42.0
3p	63.6	59.7	37.0	24.8	26.5	22.1	25.9	51.6	32.9	43.6	73.7	70.8	44.3
4p	66.0	66.9	39.3	29.5	34.7	21.0	26.0	51.9	36.0	57.1	88.2	79.6	49.7
5p	73.1	86.7	35.5	34.5	44.6	23.6	31.4	63.7	47.0	63.9	112.2	90.0	58.8
6p	96.1	94.1	49.1	37.9	54.9	35.7	38.7	73.2	64.9	78.0	133.5	109.1	72.1
7p	121.4	102.7	62.2	43.1	66.9	37.6	52.0	87.6	82.7	100.1	131.2	112.4	83.3
8p	124.9	100.2	69.9	53.8	78.2	41.3	54.7	92.0	88.7	106.8	137.9	108.0	88.0
9p	133.1	110.5	82.7	62.2	79.5	37.5	52.3	86.8	87.3	113.5	136.4	112.0	91.1
10p	139.8	126.1	79.3	75.3	75.6	46.7	51.7	84.6	91.5	119.3	126.1	118.0	94.5
11p	134.2	141.7	67.5	72.2	86.7	44.1	47.0	79.7	98.9	117.6	111.1	119.6	93.4
M. N.	134.9	131.8	67.3	77.0	81.6	47.3	43.2	84.1	93.2	114.4	107.1	126.1	92.3
Mean	107.1	103.7	63.8	54.7	66.4	46.3	48.8	76.6	70.2	92.0	123.6	101.2	79.5
Absolute Max.	319	398	681	215	294	238	227	258	235	>321	397	>575	
Absolute Day	6	14	8	6	16	24	28	22	27	23	9	18	
Absolute Min.	–164	<–270	<–427	–158	–114	<–145	<–35	–152	–131	<–157	<–193	–208	
Absolute Day	15	19	9	5	17	5	11	25	25	20	18	30	
Absolute Range	483	>668	>1108	373	408	>383	>262	410	366	>478	>590	>783	

DIURNAL VARIATION OF ATMOSPHERIC ELECTRICITY

TOKIO. 1898.



I Div. = 10 Volts

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明治三十五年二月二十九日發行

中央氣象臺

東京市麹町區内幸町一丁目五番地
惠愛堂
印刷人　多田三彌